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General Petro Corporation	per 6	Prof=2970 fs + 330 fw
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asing Size Depth Cement	LS (Cable Tool
	Production	Horizon
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FORMATION TOPS SCOUT SAMPLE E. LOG REMARKS 4-6-1 Chinle 0 Shinarump **59** 59 Moenkopi 674 Kaibab 1124 Coconino य भाग्य अस्त 1127 Supai 1590 3330 AMS (wash) Granite 3353 医侧性矫结块 ا د د دېوسوې د د and the second 1 Sub-registrati greath bille ybbbtuaser ⊈messyri nemajis da Tido Yasa TENTON TOTAL ប្រជាធារជា គួម 9233 15-18-67

o silking.

Core Analysis, DST charts, etc.

ARTHUM CO

322 Plaza Estival San Clemente, CA. 92672

December 22, 1999

E. B. Heylmun 4028 E. Blacklidge #14 Tucson, AZ. 85712

Dear Ed,

You could have requested something on which I had data. I have very little and the Mobil office the well folders are in is unknown. From memory:

General Petroleum acquired a large land block put together by George Creager and Dorsey Hager. Hager had mapped the area with a plane table and located a structural high. The high was where we drilled. After the dry hole a seismic study was conducted which depicted a large nose plunging to the west from the Defiance Uplift. Closure could not be mapped with the data obtained.

The drilling rig was new. Straight from the 1948 oil show in Tulsa. Owned by Kellogg Drilling Co, Bakersfield, California. No longer in business. Good well trained rews from the San Joaquin Valley. Nothing unusual in the operation. Water was hauled from Holbrook. During drilling a bentonite mud was used which was converted to a salt base after encountering salt in the Supai formation

The well was programed for 10,000 feet as I remember, however Hager had doubled up on formation names. He had Leadville and Hermosa in his well program. I checked with Buzz Brown about the additional section and estimated a maximun total depth of 5000 feet. Basement, biotite granite, was encountered at 3347 feet. Total depth 3,347 feet. The well was logged at 795 feet and again at total depth. Casing, 13 3/8" set at 795 feet with 600 sax cement. Top Coconino: 1,127 feet, Supai at 1,590 feet.

The well was plugged to 1,513 feet and turned over to a rancher in the area named, longs for conversion into a water well. I believe the water

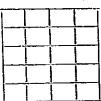
area named Jones for conversion into a water well. I believe the water forn the Coconino was brackish. Jones was required to conduct further abandoment proceedures if the water well was not completed.

Your friend Mozart gets all his money from the Bass Straits operation where Lewis Weeks took royalty instead of fees for his work with Broker Hill Prop. Anita worked for the frim in Connecticut that does the legal work for Weeks Petroleum. Anyway they are making good use of the doliars.

Regards,

Bob Smart

file 8/N 9-28



					TANK A WANT	THE REPORT OF	Perm	or Arizona it NoOF. 4440	4
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Locate well			Log (of Oil or	Gas W	ell			
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				CAS	ING REC	ORD			
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20#			· · · · · · · · · · · · · · · · · · ·	12'					
13-3/8"	54#	l ·l	J-55	775					
13-3/8"	544		J-55	775					
13-3/8"	54#		J-55	775					
13-3/8"	544		J-55	775					
13-3/8"	544		J-55	775					
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13-3/8" Size Casing	54	Where Set	MU	DDING AN Number of Sacks of	ī	TING RECOI	RD Mud Gravity	Amount Mud Us	of ed
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Size Casing	54	121	MU	DDING AN Number of Sacks of Cernent	ī		Mud	Amount Mud Us	of ed
Size Casing	514	<u>:</u>	MU	DDING AN Number of Sacks of	ī		Mud	Amount Mud Us	of ed
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Size Casing	54	121	MU	DDING AN Number of Sacks of Cernent	ī		Mud	Amount Mud Us	of ed
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Size Casing	54	121	MU	DDING AN Number of Sacks of Cernent 597	ī	thod Used	Mud	Amount Mud Us	of ed
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Size Casing 20 ** 13-3/8* Heaving pl	lug—Ma	121 7751	MU	DDING AN Number of Sacks of Cement 597	AND AI	DAPTERS Length P	Mud Gravity	Mud Us	ed

9 44464

Depth Cleaned Out Depth Shot Quantity Size Shell Used Explosive Used TOOLS USED Rotary tools were used from 0 feet to 3432 feet, and from feet to feet Cable tools were used from _____feet to _____feet, and from _____feet to _____feet DATES Put to producing..... The production for the first 24 hours was fluid, of which percent was per cent was emulsion, per cent water, and sediment. Gravity Deg. Be..... If gas well, cubic feet per 24 hours.......Gallons gasoline per 1,000 cubic feet of gas..... Rock pressure, pounds per square inch..... EMPLOYEES: Driller ., Driller FORMATION RECORD Formation Total Feet (See log and core record attached) Approved:

SHOOTING RECORD

014-240

612 S. Flower St., Los Angeles 14, California

HISTORY OF OIL OR GAS WELL

It is of the greatest importance to have a complete history of the well. Please state in detail the dates of redrilling, together with the reasons for the work and its results. If there were any changes made in the casing, state fully, and if any casing was "sidetracked" or left in the well, give size and location. If the well has been dynamited, give size, date, position, and number of shots. If plugs or bridges were put in to test for water, state kind of material used, position, and results of pumping or bailing.

	(See attached history)	المتراكسة كسيتي
		,
Base C		

Operator:

General Petroleum Corporation

Well No:

Creager-State #14-6

Location:

329'N & 348' E of W $\frac{1}{4}$ corner - Sec. 6-T19N-R23E Navajo County, Arizona

Elevation:

57201 (derrick floor)

Spud:

December 17, 1948

Abandoned: February 17, 1949

34321 TOTAL DEPTH:

Plugged Depth: 1493

Junk: none

Geological Markers

Top Chinle	101
Top Shinarump	5951
Top Moenkopie	6741
Top Kaibab	1124
Top Coconino	1127'
Top Supai	15901
Top Granite	33531

Casing Record

20" set at 12"

13-3/8" set at 775' with 597 sax

Electric Log Depths: Surface to 3432'

Operator

GENERAL PETROLEUM_CORPORATION:

Field Navajo County (Ariz)

Well No.

Creager State 14-6

Sec. 6, T 19 N, R 23 E, G & S R B & M

Signed

Silas Brown

Date March 29, 1949 Tible Agent

This well was drilled by K.L. Kellogg and Sons, Drilling contractors, using rotary equipment.

All measurementswere taken from the kelly bushing 19.9' above the cellar walla

1948

DRILLING AN EXPLORATORY WELL

11-29

Rotary equipment was moved in and rigged up.

12-17

to been lost and regained at 647' and 785'. 12-26

12-27 a Schlumberger electric log was run from 140' to 795'.

12-29 CEMENTING 13-3/8" CASING AT 795'

13-3/8" O.D., new, 54#, J-55, short T&C casing was cemented at 795' with 530 sax of El Toro construction cement, the 1st 300 sax being mixed with 3% Aquagel.
Return circulation was spotty. (Mixing time 42minutes, displacing time 30 minutes slurry weight not recorded, final pressure 300#. Finished at 11:55 A.K. by Halliburton cementers.) 66 sax of cement was pumped in around the outside of the 13-3/8" casing, bringing cement to the surface.

The casing was landed in the cellar and the drilling control head installed. The casing was tested with 600# for 15 minutes. O.K.

12-30 to 2/5/49

12-1" hole was drilled and spot cored 795'/1320' and 11" hole drilled and spot cored 1320'/3432'. Circulation was lost and regained while drilling at 1100', 1136', 1498', 1307', 1570', 1633', 1655', and 2633'. No showings of oil or gas worthy of a test were encountered.

2-6 & 2-7

A Schlumberger electric log was run 795'/3432'.

ABANDONING

BRIDGING WITH CEMENT 1630' /1513'

With open end drillpipe at 1630', one hundred sax of El Toro construction cement was pumped in and displaced. (Mixing time 2h minutes, displacement time 8 minutes, slurry 112#. Completed at 10:25 P.M' with rig pumps.) After approximately 8 hours, stringers of cement were found 1580'/1630'. 75 sax of El Toro construction cement, with 3% of Aquagel flakes, was pumped in at 1630', and displaced with 19 barrels of mud. (Mixing time 25 minutes, displacing time 5 minutes. Completed at 2:55 P.M. with rig pumps.) After 11 hours and 50 minutes the top of the plug was located at 1513'. The locating of the plug at 1513' was witnessed by T. R. Cochran, of the Arizona Highway Patrol, and Loyd Baker, Deputy Sheriff. General Petroleum witness was Al Saulsbury, drilling foreman.

2-8

2-13

The mud was circulated out of the hole from 1513' with water.

8 feet of 13-3/8" casing was welded on th the top of the existing 13-3/8" casing, bringing it to the ground level. The well was capped and abandoned February 13, 1949.

CONDITION OF HOLE AS ABANDONED

CASING RECORD: 13-3/8" cemented at 795' (No water shut-off

TOTAL DEPTH: 34321

PLUGGED DEPTH:

ינ1513

JUNK: None

HOLE SIZE SUMMARY:

> B. K. Webb Merch 29, 1949

65056559

Operators General Petroleum Corporation Well No: Creager-State #14 -6 Sec. 6, T. 19 N., R. 23 E. $(SW_4^1SW_4^1NW_4^1)$ Navajo County, Arizona Locations 5720' derrick floor **Elevation:** Abandoned: February 17, 1949 December 17, 1948 Spud: 34321 Plugged Depth: 1493 Total Depth: Junk: None Geological Markers Top Chinle Top Shinarump Top Moenkopie Top Kaibab Top Coconino Top Supai 11271 1590! 3353! Top Granite

20" Set at 12' - 13-3/8" set at 775' with 597 sax

Casing Record

TOP		BOTTOM	REC' Y	FORMATION
	DITCH	SAMPLES	•	
		ŢO1		Surface soil to 10° TOP CHINLE FORMATION AT 10° No samples taken.
40		50		Sand, white, fine to medium graned with shale, red fissile.
50		60	•	Sand, white, medium to coarse with grey shale.
60		80		Sand, as above.
80		100		Sand, as above with considerable grey shale and much bentonite
100	•	110		Sand, grey to white, medium to few coarse grains, round to sub-angular with some bentonite and shale.
110	1-	130		Sand, as above.
130		140	-	Sand, as above. First electric log did not record above this point due to lack of fluid.
140	,	150		Shale, red, fissile.
150))	160		Shale, red, fissile, with sand, white, coarse to medium, angular to sub-round.
160)	180		Sand and shale, as above.
180)	190		Shale, red, fissile, with minor sand and siltstone fragments.
190)	200		Sand, white to grey, medium to coarse, angular to angular grains quartzitic composition.
200		210		No Sample.
210)	220		Shale, variegated color, fissile with sand, white, medium grained, sub-angular.
220)	230		Variegated sandy shale (Painted Desert Section)
230)	570	t w	Sandy shale, as above. Colors vary- white, grey, red, maroon
240) ·	250	· · · · · · · ·	Sandy shale, with streaks of siltstone, red massive. (1)
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cP 44464

General Petroleum Corporation - Creager-State #14-5 - Sec. 6, T. 19 N., R. 23 E., Navajo County

250	_		
	2601		Variegated sandy shale, as above with micaceous siltstone.
260	280		Sandy shale, as above with siltstone.
280	290		Sand, white, poorly indurated, sub-round, sub-angular, arkose composition.
290	300		Sand, as above, with variegated silty shale.
300	310		Shale, grey, red, white, fissile with sand, as above.
310	320		Sand, white to buff, poorly cemented, sub-angular, medium to coarse grains with shale, red and grey.
320	330		Shale, grey, fissile with white fragments of clay.
330	340		Shale, as above,
340	350		Sand, varied color - red predominate. Angular to sub-angular, fine to medium grained micaceous.
350	360		Sand, as above, with grey shale fragments.
360	370		Sand, as above with increase in shale.
370	380		Shale, red to grey fissile with sand, small amount, as above
380	390		Shale, as above
390	400		Siltsone, dark marcon, massive, with very fine crystals of sand, micaceous.
400	410	•	Siltstone, as above with bentonite.
410	420	•	Siltstone, vary colored with little bentonite and few sand grains.
1120	430		Siltstone, red massive with fragments of white siltstone and some sand grains.
430	440		Siltstone, as above with bentonite.
1410	450		Siltstone, as above with bentonite.
450	470		Siltstone, as above with bentonite. Survey at 470 15 minutes.
470	480		Siltstone, as above.
480	490		Siltstone, dark maroon, massive, micaceous, with red (brick) shale, fissile.
490	500		Siltstone, as above with fragments of red shale and dark grey shale.
500	510		Siltstone and shales as above with increase of grey shale.
510	520		Shale, grey, dark fissile with grey and white siltstone.
520	540		Shale and siltstone, as above with bentonite.
540	550	•	Shale, grey, fissile with few conglomerate pebbles.
550	560		Shale, grey, fissile, with sand grains and much Cl., Minor amoun of siltstone, dark maroon, massive.
560	570		Siltstone, dark gray, massive with coarse crystals of quartz and chert disseminated through the silt matrix.
570	580		Siltstone, as above.

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General TOP	Fetroleum BOTTOM	Corporation - REGIY	Creager-State #11-6 - Sec. 6, T. 19 N., R. 23 E., Navajo County FORMATION
580	590		Siltstone and shale, variegated to dark red color, fissile, micaceous, bentonitic, few grains very fine, white sand.
590	600		Sandstone, white, poorly cemented, angular to sub-round, grains with streaks of red clay and shale. Sand is arkose. Schlumberger pick TOP OF SHINARUMP FORMATION AT 595 ft.
600	610		Sandstone, as above with increase of grain size. Shale and clay present in smaller amount.
610	620		Red conglomerate pebbles, shale, angular with a few red chert fragments with sandstone matrix as above.
620	630		Conglomerate, buff to yellow color, arkose composition, granule grain size, sub-round to angular matrix. Sandstone, buff, poorly cemented.
630	640		Conglomerate, as above with increased amount of sandstone, arkosic, grey to buff.
6l±0	650		Conglomerate and sandstone, as above with small amount micaceous grey clay.
650	660		Conglomerate and sandstone, as above. (Poor sample)
660	670		Conglomerate and sandstone, as above.
670	680		Siltstone, dark red, massive. TOP OF MOENKOPIE FORMATION at 674 ft.
680	690		Siltstone, as above with streaks of sandstone, white, poorly cemented, porcus, quartzitic.
690	700	·	Siltstone, as above without sand streaks.
700	710		Siltstone, dark red, as above with angular grains of buff, white, yellow arkose sand.
710	720		Siltstone, as above.
720	730		Siltstone, dark red to maroon, massive with streaks of shale, red, fissile.
730	740		Siltstone, as above.
740	750		Siltstone, as above.
750	760		Siltstone, as above with shale, brick red and sand, white, medium grained with cement of reddish material.
760	770		Shale and siltstone, brick red to maroon, micaceous.
770	780		Shale and siltatone, as above.
780	785		Siltstone, as above with high content of mica.
785	790	,	Siltstone, as above, micaceous, some shale.
790	795		Circulation sample at 795' siltstone, dull red with some fine to very fine grains of white arkose sand.
795	800		No sample - cement contamination - survey at 795 - 5 min.
800	810		Siltstone, as above.
810	815		Siltstone, as above.

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TOP	BOTTOM	REC'Y	Creager-State #14-6 - Sec. 6, T. 19 N., R. 23 E., Navajo Count FORMATION CORE #1 815' - 835' Rec. 20'
815	835	201	Siltstone, mottled red and green, well indurated angular grain well sorted, massive with white nodules of medium grained sand.
835	865		Siltstone, mottled red and green. In the red material mica is present in minor amounts with sand, white, fine grained.
			CORE #2 865'-885' Rec. 20'
865	885 (Top	201 111)	Siltstone, mottled red and green. Silt size to a few very fing grains of sub-angular to sub-round shape. Well indurated, well sorted. Predominate mineral Quartz, massive, tight.
	(Next (Bott	141) 30m.51)	Siltstone, red, other characteristics the same as above. The same as top 11 feet.
885	890	-	Siltstone, mottled red and green.
890	900		Siltstone, as above with gypsum in small amount.
900	910		Siltstone, as above and sand, brown, medium to fine grains with little gypsum.
910	920		Sand, brownish grey, medium to fine, porous, fair induration, arkose composition.
920	930		Drilling break indicated sand, as above, stopped at 924 . The siltstone, brown-red with mica and considerable gypsum.
930	950	•	Siltstone, with gypsum, as above.
950	960		Siltstone, as above.
960	970		Siltstone, as above.
970	980		Sand, grey, fine to medium grained, angular to sub-round with siltstone, as above.
980	990		Siltstone, red, massive with shale partings and gypsum.
1000	1010		Siltstone, red to dark maroon. Red crystals of Quartz are present in the silt matrix with gypsum and small amount of bentonite.
1010	1020		Siltstone, as above with shale, red, fissile.
1020	1030		Siltstone and shale, as above, with sand, white, medium grained, micaceous.
1030	1040		Siltstone, shale, and sand, as above.
1040	1050		Siltstone, dark marcon, micaceous. Little gypsum.
1050	1060		Siltstone, as above with large quantities of gypsum. (The silt is calcareous.)
1060	1080		Siltstone, as above.
1080	1090		Siltstone and shale, red, gypsum present. Survey at 1057: hole vertical.
1090	1100		Siltstone and shale, as above with sand, brown-red, fine to medium, sub-angular grains, micaceous, calcareous.
		-	Circulation sample at 1100 feet, Sand, brownish-red, fine to medium, sub-angular grains, micaceous, calcareous.
1100	1120		Sand, as above.

(4)

TOP	BOTTOM	REC [®] Y	FORMATION
1120	1125	·	Sand, as above with appearance of limestone in large amounts, little chalk. Drilling time per foot slowed down. (Top of KAIBAB at 1124: .)
			Circulation Sample at 1127 feet. Sand, white, medium to a few coarse grains, massive, well indurated, angular to sub-angular, well sorted. Quartz predominate mineral. Fair porosity, fair K- Top of COCONINO at 1127 feet.
			Core #3 1127-1167 Rec. 7%.
1127	1170	01	Missed.
11/10	1147	78	Sand, white, with slight brown stain, fine to medium grained, hard, sub-angular to rounded, well-sorted, quartz composition, cross bedded, tight. No show gas or oil.
			CORE #4 1151-1162' Rec. 3'.
			Sand, shale with slight brown stain, hard, rounded, well sorted, quartz predominate with mica in small flakes, bedding massive, fair porosity & K. (Mud invaded core) no fossils.
1162	.		Drilling ahead for 100 feet or to a drilling break from hard sand - then core.
1162	1200		Sand, white, with slight brown stain due to presence of flesh color quartz grains.
1200	1230		Sand, as above.
1230	1260		Sand, as above, with stringer or lenses of sand, flesh color, with same lithic characters as above. Survey at 1260 feet 30 minutes (0° 301.)
1260	1270		Sand, as above with increase in sand, flesh to red color, fine to medium, sub-angular grains-color due to red quartz crystals, silica cement and small amount iron oxide.
1270	1280	÷. *	Sand, white and flash red, as above.
1280	1290		Sand, as above.
1290	1300		Sand, flesh red, fine to medium grained with sand, white.
			Circulation sample at 1300 feet. Sand, flesh red with minor amount sand, white, as above.
			CORE #5 1300-1320: Rec. 12:
	· .		Lost circulation while coring at 13081.
1300	1305		Sand, reddish to flesh brown, fine to medium, hard, sub-angulato sub-round, well sorted quartz, cross-bedded, fair porosity and K. All quartz grains are white.
1305	1312	•	Missing.
1312	1314		Sand, brick red, fine to medium grained, well sorted, quartz, bedding indistinct, fair porosity & K, quartz grains are
1315	1316		red - translucent, iron oxide cement. Sand, as above, with lenses of brownish-white sand, bedding
7074	3 02 0		distinct, flat.
1316 1320	1319		Sand, as described 1300'=1305'. Missing.
1320	1350		Sand, as above.

6722B45

Sand, brick red, fine to medium, well indurated, rounled to sub-rounded with few sub-augular grains, Quartet te and Limonite predominate with news bistite. Bedding indistinct. Good porosity and R. No foresin, appears to be well. Sand, as above with stringers of sand, with paler red color, also black carbon spots. (Do not give reaction with Carbon-Tet). Spots are found only in two inch some. Sand, as above with red siltstens partings. Sand, light brick red, other characters as of 1350-1353'. Missing. Sand, light brick red, other characters as of 1350-1353'. Missing. Sand, as above, in last core. ORE #7 1/1201-1800' Rec. 17'. Sand, berren, brick ted to flesh red, well indurated, rounded to sub-tounled with a few sub-angular grains, good porosity and E, siltstone partings. (No show gas or oil.) Hay the of Missing. Sand, as above. Sand, Tar. This is sand as described above with heavy appalatic material. Distribution spotty. Cats with Carbon Tetrachloride. Distribution of Thuis. Sand, as above. No tar found, Circulation sample. Sand, as above. No tar found, Sand, as above. No veridence of Tar. GORE #6 15301-1550! Rec. 5'.	TOP	BOTTOM	REC' Y	FORMATION
Sad-rounded with few sub-augular grains. Quartaits and Limonthe predominate with none birelity. Bedding indistince. Good powerly and M. No forstile, appears to be selv. Sand, as above with stringers of sand, with palar red color, also black cericus packs. (Do not give reaction with Cerbon-Red). Specks are found only in the inch serie. Sand, as showe with red siltstone partings. Sand, light brick red, other characters as of 1360-1353'. Missing. Sand, light brick red, other characters as of 1360-1353'. Missing. Sand, as above, in last core. ORE #7 MANUALINO Rec. 17'. Sand, burren, brick red to flesh red, well indurated, rounded to sub-tounded with a few sub-singular grains, well sorted, quarts predominate mineral, badding indistinct, good powering and K, siltstone partings. (No show gas or oil.) Missing. Sand, as above. Sand, as above. No tar found, Circulation sample. Sand, as above. No tar found, Circulation sample. Sand, as above. No tar found, Sand, as above. Sand, as above. No tar found, Sand, a				CORE #6 1350'-1370' Rec. 9'.
siles black carbon apoles. (Do not give reaction with Cerbon-Tet). Spects are found only in two inch some. 1356	1350	1353		sub-rounded with few sub-angular grains. Quartzite and Limonite predominate with some bistite. Bedding indistinct. Good porosity and K. No fessils,
1357 1359 Sand, light brick red, other characters as of 1350-1350'. 1370 Missing. Sand, as above, in last core. CORE #7 1424 - 150' Rec. 17'. Sand, barren, brick red to fleeh red, well indurated, rounded to sub-counsed with a few sub-coughier graine, well corted, quertex predominate mineral, bedding indistince, good porcety and E, siltstone partings. (No show gas or oil.) 1437 1440 0' Missing. Sand, as above. Sand, Far. This is sand as described above with heavy appalatic material. Distribution spotty. Cata with Carbon Tetrachloride. Distinct black discoloration of fluid. Sand, as above. No tar found. Circulation sample. Sand, as above. No tar found. Circulation sample. Sand, as above. No vidence of Tar. CORE #8 1530 1550 150 150 150 150 150 150 150 150 1	1353	1355		also black carcon spoks. (Do not give reaction with
1370 1h20 Sand, as abown, in last core. CORE #7 1h201-1h20 Rec. 171. 1h20 1h37 171 Sand, barren, brish red to flesh red, well indurated, rounded to aboventable with a few sub-capillar grains, well sorted, querts predeminate mineral, bedding indistinct, good powering and E, selfstone partings. (No show gas or oil.) 1h37 1h40 0 Missing. 1h40 1500 Sand, as above. 1500 1505 Sand, as above. 1500 1506 Sand, as above. 1510 Sand, as above, with shale, purple, fissile partings. 1510 1520 Sand, as above. 1520 1520 Sand, as above. 1520 1525 Sand, Tar. This is sand as described above with heavy appalation material. Distribution spotty. Cata with Carbon Tetrachloride. Distribution spotty. Cata with Carbon Tetrachloride. Distribution spotty. Cata with Carbon Tetrachloride. Distribution spotty. 1530 Sand, as above. No tar found. 1530 Circulation sample. Sand, as above - No evidence of Tar. CORE #8 1500-1570 Res. 17. 1550 1563 13' Sand, well indurated, fine to medium, well indurated, well sorted with saltstone partings. Sand is barren. Good porosity and E. A show of gas bubbles appeared for a few minutes in the mail. CORE #9 1550-1570 Res. 17. 1564 Sand, as above, with brick red color. 1565 1567 2' Sand, as top 12'. No show.	1356			Sand, as above with red siltstone partings.
1370 1h20 Sand, as above, in last core. CORE #7 1h20*-lb0* Rec, 17*. Sand, berren, brick red to flesh red, well indurated, rounded to sub-tounded with a few sub-angular grains, well sorted, querts predominate mineral, bedding indistinct, good perceity and K, siltstone partings. (No show gas or oil.) 1437 1h40 0' Missing. 1440 1500 Sand, as above. 1500 1505 Sand, as above. 1500 1505 Sand, as above. 1510 Sand, as above. 1510 Sand, as above. 1510 Sand, as above. 1520 Sand, as above. No tar found. 1520 Sand, as above. No tar found. 1530 Sand, as above - No evidence of Tar. CORE #6 1530*-1550* Rev. 5'. 1530 Sand, brick red to lighter red, fine to medius, well indurated, well sorted with siltatone partings. Sand is barren. Good porosity and K. A show of gas bubbles appeared for a few minutes in the mid. 1530 Sand, well indurated, fine to medium, well sorted, frosted quarts with feldinger and mice in small amounts. Fedding indistincts. Good porosity & K, siltstone partings No show. 1560 Sand, as above, with brick red color. 1561 Sand, as above, with brick red color.	1357	1359		Sand, light brick red, other characters as of 1350-1353'.
the core for traching the core of the core	1359	1370		Missing,
1437 17' Sand, barren, brick red to flesh red, well indurated, rounded to sub-vounded with a few sub-angular grains, well sorted, querts predentiate whereal, bedding indistinct, good porosity and E, siltstone partings. (No show gas or oil.) 1437 1440 0' Missing. 1440 1500 Sand, as shows. 1500 1505 Sand, as shows. 1500 1505 Sand, as shows. 1510 1520 Sand, as shows. 1530 Sand, as shows. No tar found. 1530 Sand, as shows. No tar found. 1530 Sand, as shows. No evidence of Tar. 1530 Sand, brick red to lighter red, fine to medius, well indurated, well sorted with sitatone partings. Sand is barren. Good porosity and K. A show of gas bubbles appeared for a few minutes in the mais. 1530 Sand, well indurated, fine to medium, well sorted, frosted quartz with feldinger and mica in small amounts. Fedding indistincts. Good porosity & K, siltstone partings 1530 Sand, as shows, with brick red color. 1540 Sand, as shows, with brick red color.	1370	1420		Sand, as above, in last core.
to sub-complet with a few sub-engular grains, well sorted, querts predominate mineral, bedding indistinets, good porcently and E, siltstone partings. (No show gas or oil.) 1437 1440 0' Missing. 1440 1500 Sand, as above. 1500 1505 Sand, as above. 1500 Sand, as above. 1500 Sand, as above. 1510 Sand, as above. 1510 Sand, as above. 1510 Sand, as above. 1520 No sand, as above. 1520 Sand, as above. 1520 No sand, as above. 1520 Sand, as above. No tar found. 1521 Circulation sample. 1520 Sand, as above. No tar found. 1520 Sand, as above. No evidence of Tar. 1530 Circulation sample. 1530 Sand, brick red to lighter red, fine to medius, well indurated, well sorted with siltstone partings. Sand is barren. Good porosity and E. A show of gas bubbles appeared for a few minutes in the mmi. 1530 CORE #9 ISSO-ISSO! Res. 5'. 1530 Sand, well indurated, fine to medium, well sorted, frosted quarts with feldinger and mica in small amounts. Bedding indistinats. Good porosity & E, siltstone partings. 1564 Sand, as above, with brick red color. 1565 Sand, as above, with brick red color.				CORE #7 11/201-11/201 Rec. 171.
1500 1500 Sand, as above. 1501 1500 Sand, as above. 1502 1510 Sand, as above, with shale, purpls, fissile partings. 1517 —— Givoulation sample. Sand, brick red to flesh red. Good poresity and K. 1510 1520 Sand, as above. 1520 1525 Sand, Tar. This is sand as described above with heavy Asphaltic material. Distribution spotty. Cuts with Carbon Tetrachloride. Distribution spotty. Cuts with Carbon Tetrachloride. Distribution of fluid. 1525 1530 Sand, as above. No tar found. 1526 Sand, as above - No evidence of Tar. 1530 Circulation sample. 1530 Sand, as above - No evidence of Tar. 1530 Sand, brick red to lighter red, fine to medium, well indurated, well sorted with slitistone partings. Sand is barren. Good porosity and K. A show of gas bubbles appeared for a few minutes in the med. 1530 Sand, well indurated, fine to medium, well sorted, frosted quartz with feldmear and mica in small amounts. Sedding indistings. Good porosity & K, siltstone partings No show. 1564 Sand, as above, with brick red color. 1565 1567 2' Sand, as top 12'. No show.	7)150	1437	177	to sub-rounded with a few sub-engular grains, well sorted, quests predominate mineral, bedding indistinct, good
1500 1505 Sani, as above. 1506 1510 Sani, as above, with shale, purpls, fissile partings. 1517 —— Circulation sample. Sand, brick red to flesh red. Good poresity and K. 1510 1520 Sand, as above. 1520 1525 Sand, Tar. This is sand as described above with heavy Asphaltic material. Distribution spotty. Cats with Carbon Tetrachloride. Distinct black discoloration of fluid. 1526 1530 Sand, as above. No tar found. 1527 1530 Sand, as above. No tar found. 1530 —— Circulation sample. Sand, as above - No evidence of Tar. CORE #8 1530 - 1550 Res. 5'. 1530 1550 5' Sand, brick red to lighter red, fine to medium, well indurated, well sorted with siltstone partings. Sand is barren. Good porosity and K. A. show of gas bubbles appeared for a few minutes in the mmi. CORE #9 1550-1570' Res. 17'. 1550 1561 13' Sand, well indurated, fine to medium, well sorted, frosted quarts with feldurar and mica in small amounts. Bedding indistincts. Good perceity & K., siltstone partings No show. 1564 Sand, as above, with brick red color. 1565 1567 2' Sand, as top 12'. No show.	1437	1740	Oz	Missing.
1505 1510 Sand, as above, with shale, purple, fissile partings. 1517 —— Circulation sample. Sand, brick red to flesh red. Good powerity and K. 1510 1520 Sand, as above. 1520 1525 Sand, Tar. This is sand as described above with heavy Asphalatic material. Distribution spotty. Cats with Carbon Tetrachloride. Distribution spotty. Cats with Carbon Tetrachloride. Distribution of fluid. 1525 1530 Sand, as above. No tar found. 1526 Circulation sample. Sand, as above - No evidence of Tar. 1530 —— Core #6 1530 -1550 Res. 5. 1530 Sand, brick red to lighter red, fine to medium, well indurated, well sorted with siltstone partings. Sand is barren. Good porosity and K. A show of gas bubbles appeared for a few minutes in the mid. 1550 1563 13' Sand, well indurated, fine to medium, well sorted, frosted quarts with feldinger and mica in small amounts. Bedding indistinal. Good porosity & K, siltstone partings No show. 1564 Sand, as above, with brick red color. 1565 1567 2' Sand, as top 12'. No show.	17170	1500		Sand, as above.
1517 —— Givoulation sample. Sand, brick red to flesh red. Good porcesity and K. 1520 1520 Sand, as above. 1520 1525 Sand, Tar. This is sand as described above with heavy amphabitic material. Distribution spotty. Cats with Carbon Tetrachloride. Distribution spotty. Cats with Sand, as above. No tar found. 1525 1530 Sand, as above. No tar found. 1530 Circulation sample. Sand, as above. No evidence of Tar. (ORE #8 1530-1530 Rec. 5'.) 1530 Sand, brick red to lighter red, fine to medium, well indurated, well sorted with siltstone partings. Sand is barren. Good porosity and K. A show of gas bubbles appeared for a few minutes in the mul. (ORE #9 1550-1570 Rec. 17'.) 1550 1563 13' Sand, well indurated, fine to medium, well sorted, frosted quartz with feldingar and mica in small amounts. Sedding indistings. Good porosity & K, siltstone partings. No show. 1564 Sand, as above, with brick red color. 1565 1567 2' Sand, as top 12'. No show.	1500	1505		Sand, as above.
porceity and K. 1520 Sand, as above. 1520 1525 Sand, Tar. This is sand as described above with heavy Asphaltic material. Distribution spotty. Cats with Carbon Tetrachloride. Distinct black discoloration of fluid. 1525 1530 Sand, as above. No tar found. 1530 Circulation sample. Sand, as above - No evidence of Tar. 1530 ONE #8 1530-1550! Res. 5'. 1530 Sand, brick red to lighter red, fine to medium, well indurated, well sorted with siltstone partings. Sand is barren. Good porosity and K. A show of gas bubbles appeared for a few minutes in the mai. 1550 1563 13' Sand, well indurated, fine to medium, well sorted, frosted quartz with feldmora and mica in small amounts. Bedding indistincts. Good porosity & K., siltstone partings. ~ No show. 1564 Sand, as above, with brick red color. 1565 1567 2' Sand, as top 13'. No show.	1505	1510		Sand, as above, with shale, purple, fissile partingu.
1520 1525 Sand, Tar. This is sand as described above with heavy Asphaltic material. Distribution spotty. Cats with Carbon Tetrachloride. Distribution spotty. Sand, as above. No tar found. Circulation sample. Sand, as above. No evidence of Tar. CORE #8 15301-15501 Res. 51. Sand, brick red to lighter red, fine to medium, wall indurated, well sorted with sittstone partings. Sand is barren. Good porosity and K. A show of gas bubbles appeared for a few minutes in the mml. CORE #9 1550-15701 Res. 171. CORE #9 1550-15701 Res. 171. Sand, well indurated, fine to medium, well sorted, frosted quartz with feldinger and mica in small amounts. Bedding indistinct. Good porosity & K, siltstone partings. No show. Sand, as above, with brick red color. Sand, as above, with brick red color.	1517	طه که خصوی	:	Giroulation sample. Sand, brick red to flesh red. Good porceity and K.
Asphaltic material. Distribution spotty. Cats with Carbon Tetrachloride. Distinct black discoloration of fluid. Sand, as above. No tar found. 1530 —— Circulation sample. Sand, as above - No evidence of Tar. CORE #8 1330-1530 Res. 5'. 1530 ISSO 5' Sand, brick red to lighter red, fine to medium, well indurated, well sorted with siltstone partings. Sand is barren. Good porosity and K. A show of gas bubbles appeared for a few minutes in the mmil. CORE #9 1550-1570 Res. 17'. 1550 ISSO 13' Sand, well indurated, fine to medium, well sorted, frosted quarts with feldurar and mica in small amounts. Fedding indistingt. Good porosity & K, siltstone partings No show. 1564 Sand, as above, with brick red color. 1565 ISSO 2' Sand, as top 13'. No show.	1510	1520		Sand, as above.
1530 Sand, as above. No tar found. Circulation sample. Sand, as above - No evidence of Tar. CORE #8 1530 -1550 Res. 5t. 1530 1550 5t Sand, brick red to lighter red, fine to medium, well indurated, well sorted with siltstone partings. Sand is barren. Good porosity and K. A show of gas bubbles appeared for a few minutes in the mmi. CORE #9 1550-1570 Res. 17t. CORE #9 1550-1570 Res. 17t. Sand, well indurated, fine to medium, well sorted, frosted quartz with feldsper and mica in small amounts. Bedding indistinct. Good porosity & K, siltstone partings No show. Sand, as above, with brick red color. 1565 1567 2t Sand, as top 13t. No show.	1520	1525		Asphaltic material. Distribution spotty. Cats with Carbon Tetrachloride. Distinct black discoloration of
Sand, as above - No evidence of Tar. CORE #8 1530 -1550 Res. 5'. Sand, brick red to lighter red, fine to medium, well indurated, well sorted with siltstone partings. Sand is barren. Good porosity and K. A show of gas bubbles appeared for a few minutes in the mail. CORE #9 1550-1570 Res. 17'. Sand, well indurated, fine to medium, well sorted, frosted quarts with feldmoar and mica in small amounts. Bedding indistingt. Good porosity & K, siltstone partings No show. Sand, as above, with brick red color. Sand, as top 13'. No show.	1525	1530		
Sand, brick red to lighter red, fine to medium, well indurated, well sorted with siltstone partings. Sand is barren. Good porosity and K. A show of gas bubbles appeared for a few minutes in the mmi. CORE #9 1550-1570' Res. 17'. Sand, well indurated, fine to medium, well sorted, frosted quartz with feldspar and mica in small amounts. Bedding indistinct. Good porosity & K, siltstone partings No show. Sand, as above, with brick red color. Sand, as top 13'. No show.	1530	the class that they		
well sorted with siltstone partings. Sand is barren. Good porosity and K. A show of gas bubbles appeared for a few minutes in the mmi. CORE #9 1550-1570 Rev. 171. Sand, well indurated, fine to medium, well sorted, frosted quartz with feldupar and mica in small amounts. Redding indistinct. Good porosity & K, siltstone partings. No show. Sand, as above, with brick red color. Sand, as top 131. No show.			•	ORE #8 15301-25301 Ren. 51.
CORE #9 1550-1570 Rev. 17'. 1550 1563 13' Sand, well indurated, fine to medium, well sorted, frosted quartz with feldspar and mica in small amounts. Bedding indistinct. Good porosity & K, siltstone partings No show. Sand, as above, with brick red color. 1565 1567 2' Sand, as top 13'. No show.	1530	1550	51	Sand, brick red to lighter red, fine to medium, well indurated, well sorted with siltstone partings. Sand is barren. Good porosity and K. A show of gas bubbles appeared for a few minutes in the mail.
Sand, well indurated, fine to medium, well sorted, frosted quartz with feldmar and mica in small amounts. Bedding indistinct. Good porosity & K, siltstone partings No show. Sand, as above, with brick red color. Sand, as top 13'. No show.				
guartz with feldspar and mica in small amounts. Bedding indistinct. Good porosity & K, siltstone partings No show. Sand, as above, with brick red color. Sand, as top 13°. No show.	1550	1563	131	Sand, well indurated, fine to medium, well sorted, frosted
1565 1567 2' Sand, as top 13'. No show.		187	• .	quartz with reldspar and mica in small amounts. Fedding indistinct. Good porosity & K, siltstone partings.
	1564	,		Sand, as above, with brick red color.
1568 1570 0' Missing.	1565	1567	21	Sand, as top 13%. No show.
	1568	1570	01	Missing.

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General TOP	Petroleum BOTTOM	Corporation REC'Y	-Creager-State #14-6-Sec. 6, T. 19N., R. 23 E. Navajo FORMATION County
1:570	1580		Sand, light red, fine to medium with quartz granules, white, frosted.
1585	1595		Sand and quartz, as above, with small amount of calcareous shale.
			TOP SUPAI 1590'
1595	1600		Quartz granules as above with shale, red, fissile, limey.
1600	1625		Samples indicate decrease in smount of quartz and definite presence of shale, red, fissile, limey. Coring ahead to determine if not in the top of the Supai.
			CORE #10 1625-1633' Rec. 10"
1625		÷	Sand, red, fine to medium, hard, quartz predominate mineral, good porosity and K. No show gas or OIL. No taste or order.
1623	1633		Missing. Lost circulation at 1627 and again at 1633.
			Survey at 1625' 1°.
1633	1660		Due to lost circulation problem no returns were obtained that can be placed in the log. A few returns indicate: Sandstone, red with granules of quartz and a predominance of red, silty, micaceous shale.
الماسية			CORE #11 1660%-1670% Rec. 10" "Wire Line - Mercury"
And the second s	Тор	4" 6"	Cement Sandstone, red, fine to medium, hard, angular to sub-angular, well sorted, quartz - bedding indistinct. Good porosity and K. No show, with spots of pure white sandstone with similar lithic character.
The contract of the contract o	·		CORE #12 1670' - 1679' Rec. 6' "Wire Line - Mercury"
1670	1676	61	Sandstone, dark red, fine to medium, fair induration, poorly sorted, quartz and iron oxide predominate. Porosity poor with spots of white sandstone, as above.
1676	1679	01	Missing. No show gas - oil.
1679	1689		No sample.
1689	1700		Sandstone, shaley, dark red with white spots of sandstone.
1700	1710		Red shaley sandstone as above.
1710	1730		Shale and sandstone, as above.
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C.S	BOTTOM		FORMATION
		·	CORE #6 1350'-1370' Rev. 9'.
1350	1353		Sand, brick red, fine to medium, well indurated, rounded to sub-rounded with few sub-angular grains. Quartsite and Limonite predominate with some bictite. Bedding indistinct. Good porosity and K. No tessile, appears to be web.
1353	1355		Sand, as above with stringers of sand, with palar red color, also black carcon spots. (Do not give reaction with Carbon-Tet). Spots are found only in two inch zone.
1356			Sand, as above with red siltstone partings.
1357	1359		Sand, light brick red, other characters as of 1350-13531.
1359	1370		Missing,
1370	1750		Sand, as above, in last core.
			CORE #7 1/201-1/2/01 Rec. 171.
1420	1437	171	Sand, barren, brick red to flesh red, well indurated, rounded to sub-rounded with a few sub-angular grains, well sorted, quartz predominate mineral, bedding indistinct, good porosity and K, siltstone partings. (No show gas or oil.)
1437	31410	Ot	Missing.
1440	1500		Sand, as above,
1500	1505		Sand, as above.
1505	1510		Sand, as above, with shale, purple, fissile partings.
1517	66 246		Girculation sample. Sand, brick red to flesh red. Good poresity and K.
1510	1520		Sand, as above.
1520	1525		Sand, Tar. This is sand as described above with heavy Asphaltic material. Distribution spotty. Cats with Carbon Tetrachloride. Distinct black discoloration of
1525	1530	·	fluid. Sand, as above. No tar found.
1530	### .		Circulation sample. Sand, as above - No evidence of Tar.
	· .	•	CORE #8 1530° -7550° Rep. 5° .
1530	1550	51	Sand, brick red to lighter red, fine to medium, well indurated well sorted with siltstone partings. Sand is barren. Good porosity and R. A show of gas bubbles appared for a few minutes in the mul.
*		•	CORE #9 1550-15701 Rev. 171.
1550	1563	131	Sand, well indurated, fine to medium, well sorted, frosted quartz with feldscar and mice in small amounts. Bedding indistinct. Good poresity & K, siltstone partings No show.
1564			Sand, as above, with brick red color.
1565	1567	21	Sand, as top 13%. No show.
1568	1570	01	Missing.

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General TOP	Petroleum BOTTOM	Corporation- REC'Y	Creager State #14-6-Sec. 6, T. 19 N., R. 23 E. Navajo FORMATION County
1730	1740		Red shale and sandstone, as above, with green shale mottling.
1740	1760		Shale, red, fissile with few floating sand grains and mica.
1760	1780		Shale, red, as above.
1780	1800		Shale, red, fissile, as above.
1800	1810		Shale, red with green shale partings.
1813	1820		Red and green shale, as above.
1820	1830		Shale, red, fissile, with some silt grains.
1830	1840		Shale, red, as above.
1840	1850		Shale, red, fissile, with shale, green and gypsum.
1850	1863		Shale, as above, with gypsum.
			CORE #13 1863-1883 Rec. 20'
1863	1883	203	Shale, red and green mottled, with red color predominate, silt to a few very fine grains, hard, well sorted, micaceous, fissile. Tight, veins of gypsum up to 1/2" in thickness. No show gas or oil.
1883	1900		Shale, red and green with gypsum, as above.
1900	1910	•	Shale, as above.
1910	1920		No sample.
1920	1940		Shale, red with gypsum and green shale, as above.
1940	1950		Shale, green fissile with some fine sandstone, red.
1950	1960	·	Sandstone, red with green and red shale and silt- stone. Some gypsum.
1960	1980	•	Sandstone, as above.
1980	2000		Sandstone, with shale and siltstone, as above.
2000	2010		Sandstone, with shale and siltstone, as above, and white sandstone, medium grained, silica cement.
2010	2030		Sandstone, as above.
2030	2050		Sandstone, with shale and siltstone, as above, white medium sandstone.
:			CORE #14 2050-2070' Rec. 20'
2050	2060	10'	Sandstone, red, very fine to fine, soft, well sorted quartz and mica with large amount Limonite cement. Bedding indistinct with partings of red clay. Poor porosity, no K.
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	General TOP	Petroleum BOTTOM	Corporation- REC'Y	-Creager State #14-6, Sec. 6, T. 19 N., R. 23 E.Navajo FORMATION County
	2060	2070	10'	Sandstone, as above with partings of sandstone, grey-green, hard, Quartz, tight, - Sandstone contains salt. Entire core barren.
	2070	2115		No samples taken.
	211.5	2125		Sandstone, as above, with green and red shale, fissile. Silt particles and clay, red, iron oxide matrix. (cemented).
	2125	2135		Shale, grey-green, fissile with clay and silt, red.
Ŧ 1	2135	2145		Shale, grey-green, fissile, calcareous, with decrease in clay and silt.
	2145	2155		Shale, grey-green, fissile, slightly calcareous.
	2155	2160		Shale, grey-green, fissile, slightly calcareous, with silt to very fine particles floating.
*** ** *	2160	2170		Shale, as above with sandstone, very fine to medium, highly calcareous.
	2170	2180		Shale, with sandstone, calcareous, as above.
	2180	2190		Shale, grey-green, fissile with sandstone, grey, fine to medium, highly calcareous.
1. 18 and 1.	2190	2200		Shale, with sandstone, as above.
の方である	2200	2210	-	Shale, grey-green, fissile, small amount sandstone and siltstone, slightly micaceous.
AND A STANDARD STANDARD	2210	2230		Shale and siltstone, as above with presence of red siltstone.
STATES TO SERVED	2230	2250		Siltstone, red, massive, with small amounts shale, grey-green fissile.
は食事した管理	2 250	2260		Siltstone, grey-green with some red and shale, grey-green, fissile.
おおおいさい と	2260	2270		Siltstone, as above, with sandstone, green, medium grains, glauconitic.
A Sugar	2270	2290		Siltstone, as above, with shale.
· ·	2290	2300		Siltatone, as above with shale.
	2300	2320		Siltstone, as above, some shale.
	2320	2330		Siltstone, with shale, as above.
The second second	2330	2340		Siltstone, grey-green, with some red and green shale, calcareous.
	2340	2350		Siltstone and shale, as above.
	2350	2360		Siltstone and shale, as above.
· · · · · · · · · · · · · · · · · · ·	2360	2370		Siltstone and shale, as above. (9)

•	. ,	,.	
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General TOP	Petroleum BOTTOM	Corporation REC'Y	-Creager State #14-6, Sec. 6, T. 19N., R. 23E. Navajo FORMATION County
2370	2380		Siltstone and shale, as above, shale has salty taste.
2380	2390		Siltstone, as above, with salty taste with fragments of black siltstone.
2390	2400		Siltstone, as above.
2400	2410		Siltstone, as above, grey-green and black with minor amount red shaley siltstone.
2412	2420		Siltstone and sandstone, grey-green and red massive with minor amount red shale partings.
2420	2430		Siltstone, red, massive, with green siltstone with sandstone, red, very fine to fine.
2430	2440		Siltstone with sandstone, as above with more green.
2440	2450		Siltstone with sandstone, as above (Mud contains sand grains that are not Coconino and may be bedded within the siltstone.)
2450	2460		Siltstone, as above with the above sand very fine to fine, white to reddish.
2460	2470	<i>*</i>	Siltstone, as above and sandstone.
2470	2480		Siltstone, grey-green with floating grains of Quartz, granule size with minor amount of red shale and siltstone and sandstone.
2480	2490		Siltstone and sandstone, grey-green, as above.
2490	2500		Siltstone, red and grey-green as above.
2500	2520		Siltstone and sandstone, red with green mottling. Mottling due to salt content.
2520	2530		Siltstone and sandstone, as above.
			CORE #15 2530'-2550' Rec. 4' Unable to determine missing section.
			Sandstone, red, very fine to a few fine grains. Fair induration, well sorted, Quartz mica, and Limonite predominate, bedding indistinct, poor porosity and K with partings of silty micaceous shale and green spots of salt. (No show).
2550	2560		Sandstone, red, very fine to fine with siltstone and shale partings. Few spots of salt.
2560	2570		Sandstone, with siltstone, shale and salt, as above.
2570	2590		Sandstone, with siltstone, shale and salt, as above.
2590	2600		Sandstone, with siltstone, as above and sandstone, pure white. (Small spots within the red.)
2600	2610		Sandstone, with siltstone, as above.
2610	2620		Siltstone, red to grey-green with sandstone. (10)

op 44404

		20.0		hard.
	2670	2680		Sandstone and siltstone, with some shale.
	2680	2690		Sandstone, red, very fine to fine
	26 90	2700		Sandstone, red, as above, sandy shale, dark grey, fissile, with floating quartz grains. (drilled about 5 times as hard as material above 2690')
				CORE #16 2700-2717' Rec. 7'
ķ.	2700	2707	7 5	
このないとして、日本のののでは、		(Top	3')	Sandstone, red, very fine to fine, hard, angular to sub-angular grains, well sorted, quartz with mica cement by Silica and Limonite - bedding indistinct, porosity poor with siltstone partings and spots of green salt.
多多是 对方是是是对 的		(Bottom	4')	Top 6" - Sandstone, white, very fine, very hard, angular to sub-angular, Quartz with Mica (Biotite) - Silica cement. No bedding - No porosity or K.
の 一般の 一般の 一般の 一般の 一般の 一般の 一般の 一般の 一般の 一般				Next 2 feet - Sandstone, red, very fine to fine with siltstone as in top 3' of core Next 6" Sandstone, grey-green, very fine to fine, very hard angular to sub-angular. Quartz Silica cement. Cross bedded, no porosity or K. Mottling of colors.
新一次数字 10年				Bottom Foot Sandstone, red, as above, with silt- stone, salt.
The same of the factor	2 707	2717		Missing. (Entire Core Barren)
Section of the Section	2720	2730		Sandstone, red, very fine to fine, hard with silt- stone and green spots. Fragments of hard, grey- green and white sandstone, as above.
	2730	2740		Sandstone, as above.
Market Street	2740	2750		Sandstone, as above.
	2750	2760		Sandstone, red, hard with red siltstone and a few fragments of hard, fissile, black shale.
- T. C. W. W. S.	2760	2770		Siltstone, sandy, red, massive, hard, with fragments of black shale and hard silica cement white-grey sandstone. (11)
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- Comment

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	General TOP	Petroleum BOTTOM	Corporation REC'Y	-Creager State #14-6, Sec. 6, T. 19N.,R.23E.,Navajo FORMATION County
	2 770	2780		Sandy siltstone, red with shale and white sand- stone, as above.
	2780	2790		Sandy siltstone, red as above.
	2 790	2800		Siltstone, sandy red, massive with shale.
	2800	2810		Siltstone, sandy, dark red, massive, hard with fragments of white sandstone.
	2810	2820		Siltstone, with sandstone, red, massive, hard few green spots. (Do not have salty taste here)
	2 8 20	2830		Poor sample - appears to be siltstone, as above.
	2830	2840		Siltstone, sandy, red, massive, slightly micaceous, small amount of gypsum.
	2840	2850		Siltstone, red as above with fragments of green, shaley siltstone.
:	28 50	2860		Siltstone, red, as above.
let, our water control	2860	2870		Siltstone, red, massive, with sandstone, red and shale, red, fissile.
	2870	2880		Siltstone, red with mottling of green.
	2880	2890	:	No Sample.
	2890	2898		Siltstone, as above.
lette de signamente pro-	· .			CORE #17 2898-2918' Rec. 20'
•	2898	2902	41	Sandstone, dark red, very fine to fine with a few
				medium grains of mica, hard, angular to sub- angular, well sorted, indistinct bedding, massive, poor porosity, no apparent K.
Approx. Series	2902	2903	1'	Conglomerate, dark grey, granule size with medium
	·			grains, sandy matrix. Predominate minerals quartz, feldspar, with gypsum and calcite veins and fragments of volcanic material.
	2903	2911	81	Sandstone, as described 2898'-2902' with floating
				granules of Dolomitic-Siliceous material, and shale, red, fissile.
	2 912	2913	11	Sandstone and shale, as above with slickensides.
	2913	2917	41	Sandstone, as above, highly fractured with float-
· · ·				ing grains of granule size particles. Particles are Dolomitic with siliceous centers and gypsum veins.
	2917	2918	11	Sandstone, as above, softer and with shale.
:		·		(Entire core barren.)

(12)

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	General TOP	Petroleum BOTTOM	Corporation REC'Y	-Creager State #14-6, Sec. 6, T. 19 N., R. 23 E. Navajo FORMATION County
i.	2919	2930		DARK red shaley siltstone with fragments of sandston white, fine. Siltstone contains siliceous dolomitic pebbles. Some gypsum, calcareous, matrix.
31	2930	2940		Shale, siltstone, with white sandstone, as above.
	2940	2950		Shale, siltstone, with sandstone and gypsum, as above
	2950	2960		Siltstone, dark red, shaley with siliceous dolomitic pebbles - some gypsum.
	2960	2970		Siltstone, dark red, as above.
	2970	2980		Siltstone, dark red, as above.
	2980	2990		No Sample.
	2990	3000		Siltstone, as above, having a dark blue cast, micaceous.
	3000	3010		Siltstone, as above.
· :	3010	3020		Siltstone, dark red, massive with shale, red, fissile.
a e pris navis	3020	3030		Siltstone, as above with a few fragments of limey material, green, hard.
A STATE OF THE PARTY OF THE PAR	3030	3045		No Samples.
A del moltre for trans-				CORE #18 3045' - 3049' Rec. 2'
The second secon	Тор	11/21		Siltstone, shaley, red, hard, with small veins of gypsum.
	Batton	6 ¹¹		Limestone, green-grey, hard, Amorphous, bedding indistinct, poor porosity with mottling of siltstone, red. (Two cones lost in hole.)
	3050	3060		Siltstone, red with shale and green limestone.
	3 0 60	3070		Siltstone, dark red, massive with green limestone and red shale.
	3070	3080		Siltstone, dark red, slightly micaceous with some shale and gypsum.
1	3080	3090	•	Siltstone, as above.
Per Hart Activity	3090	3100		No Sample.
And the second	3100	3110		Siltstone, dark red, slightly micaceous with some gypsum.
	3110	3120		Siltstone, dark red, hard, with green limestone and red shale, fissile.
	3120	3130		Siltstone, as above.
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General FOP	BOTTOM BOTTOM	REC'Y	Creager State #14-6, Sec. (, T. 19 N., R. 23E., Navajo FORMATION County
31 3 0	3140		Siltatone, as above.
3140	3150		Siltstone, as above with fragments of green lime- stone and shale partings.
3150	3160		Siltstone, as above.
3160	3170		Siltstone, red, shaley.
3170	3180		Siltstone, shaley, red, hard.
3180	3190		Siltstone, as above.
		·	CORE #19 3192' - 3196" Cut. 4' Rec. 4'
3192	3194	21	Sandstone, red, very fine to fine, hard with silt- stone, and shale, red, partings. Spots of green limestone.
3194	3196	. 21	Sandstone, as above, with floating grains of granule black quartz, slickensides.
3196	3210		No samples.
3 2 10	3220		Sandstone, light grey, medium to coarse, calcareous, with pyrite crystals.
3220	3230		Sandstone, as above, with siltstone, red.
3230	3240		Siltstone, red, hard, with fragments of light grey sandstone, medium to coarse.
3240	3250		Siltstone, red, hard, with shale partings and a few spots of gypsum.
3250	3260		Siltstone, red as above with gypsum and Dolomite.
3 260	3270		Siltstone, red, hard, with gypsum and Dolomite.
3270	3280	•	Siltstone, as above, with gypsum. No Dolomite.
3280	3290	-	Siltstone, as above, with increased amount of gypsum
3290	3292		Siltstone, as above, with small amount of gypsum.
•			CORE #20 3292-3294' Cut 2' Rec. 8"
			Sandstone, red, very fine to fine, hard, well sorted some mica flakes, bedding indistinct, poor porosity, apparently little K. Vugs lined with white crystalline Calcite and green mottling of limestone. Red sandstone is slightly calcareous. Entire core barren.
3295	3300		Sandstone, red, very fine to fine, hard, with siltstone and calcite.
3300	3350		Sandstone, red, very fine, hard, as above, with siltstone partings and calcite.
3350	3355	4	Sandstone, as above, with fragments of non-weathered granitic material. TOP GRANITE 3353' (14)

		()		()		~	7 + 7 mg
General TOP	Petroleum BOTTOM	Corporation- REC'Y	-Creager	State #14-6, Sec. FORMATION	6, T.19 N.	,R.23E.	,Navajo County
3355	3360		Biotite	Granite			
3360	3375		Biotite	Granite, as above	3∙		•
			CORE #2		Cut 2' Cut 1' in Core #21	Rec. Rec.	1,
	·		Charact Minor A	euhedra 2. Potash erizing Accessory 1. Biotite ccessory Minerals 1. Pyrite ry Minerals:	e - black,	up to 3 pink platy.	
3378	3400		Biotite	Granite			
3400	3410		Biotite	Granite			
3410	3420		Biotite	Granite			
3420	3430		Biotite	Granite	· .		-
			and the second s	ng Break 3422'-342 ndicates no change		ation Sa	ample
			CORE #	23 3431! - 3432!	Gut 1'		. •
				red only small fra n the hole.	igments. Cu	itters w	ere
			Coring	time for the one	foot was 1	hour an	d 45 min.
				e Granite: Materi ne composition wit			

TOTAL DEPTH:

34321

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(15)

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Locate well	-		Log	of Oil or	Gas W			
correctly	NERAL	PETROLE	UM CORP	ORATION	Addre	ss.	ole South E Los Angeles	flower Street, 14, California
Well No	4-6	S	ection	6	Tow	nship19	¶ Ra	nge23E
Meridian	R. B	em M	County	Navaj	<u>o</u>			
Location 33	SO -	(N) feet XXX	of Son	th Tine	and 33	(E O feet xiv		Line of N.1/1
Elevation 57		-					7	ner of Sec
		_		•			the well and	all work done the
so far as can		_						
					Signe	d	S. C.	Brown
DateMs	irch 2	8, 1949			P	Title.	Agent	Petroleum Er
The sum	mary o	n this pa	age is for	the condit	ion of the	well at abov	e date.	ter retroteum Er
Commenced d	lrilling	***************************************	Decemb	er 17.19	48 Finish	ned drilling	Febru	ery 17. 19
			0	OIL OR GA	S SANDS	or zones		
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-			*•				to	
-				No. 5, from				
No. 3, from			to		No.	6, from		to
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No. 1, from	-		to		No.	3, from		to
No. 2, from	5	73	to	647		4, from		to
			•		SING REC	ORD	·	
Size Casing	Weight per Foot	Threads per Inch	Malte	Amount	Kind of Shoe	Cut and Pulled From	Perforated	Purpose
	Foot	Inch					From To	
20"	 د/ده	***************************************		12'		nn q que ma a me e quantante en tarque e escura escara		
13-3/8"	54#		J - 55	7751				,
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							-	***************************************
	·.							
		•	MU	DDING AN	ID CEMEN	TING RECOI	ed .	
Size		Where Set	1	Number	l		Mud	Amount of
Casing	<u> </u>	Where Set		of Sacks of Cement		thod Used	Gravity	Mud Used
20"						********************************		
***************************************					-			
					Addison to the case	ATAMATA INTERNA	S Carlin Carlo Laur	
******				Company of the Compan	A TOTAL CONTRACTOR		n i i salato a si i para panati	
	*********			************	···		1	/-

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		SHOO'	ring record			
Size	Shell Used	Explosive Used	Quantity	Date	Depth Shot	Depth Cleaned Out
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 	<u> </u>					
		T	OOLS USED			
otary tool	s were used from	o feet to	34321 feet,	and from	feet	tofeet
able tools	were used from	feet to	feet,	and from	feet	tofeet
			DATES	•		
			Put to pro	oducing		
ne produc	tion for the first	·24 hours was	fluid, of v	vhich	percei	nt_was,
-		emulsion,				·
•	. -	- • . • . • . • . •				se
If gas	well, cubic feet	per 24 hours	Gallons gas	oline per 1,	000 cubic feet	of gas
	•	square inch		,		
		F.	MPLOYEES:			
						, Driller
		, Dril				Driller
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		FORM	IATION RECO	KD		
F	From	То	Total Fezi		F	ormation
•• •	••••••••••••••••••••••••••••••••					
		(See log and	core record,	attached) •	
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						······································
						-4 : ,
pproved:				GENERAL P	ETROLEUM COI	RPORATION
	Da	**************************************			Company	
			Ву	·	Title	
			512 s	. Flower	St., Los An	geles 14, Califor
			er egigen i de kar	C	Address	•
**.		HISTORY O	F OIL OR GA	S WELL		and the second of the second o
It is o	of the greatest in				ll. Please stat	e in detail the date
f redrilli	ng, together witl	nportance to have a c	omplete history work and its re	of the we	ere were any	changes made in the
f redrillii asing, sta	ng, together with	nportance to have a conthe the reasons for the any casing was "side	omplete history work and its re etracked" or le	of the we esults. If th tt in the w	ere were any ell, give size	changes made in the and location: If the
f redrilli asing, sta vell has b	ng, together with ate fully, and if been dynamited,	nportance to have a c	omplete history work and its re etracked" or le on, and number	of the we esults. If the t in the w of shots.	iere were any ell, give size If plugs or br	changes made in the and location: If the idges were put in the
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of redrilling asing, standard	ng, together with ate fully, and if been dynamited,	nportance to have a conthe reasons for the any casing was "side give size, date, position of material used, position	omplete history work and its re etracked" or le on, and number ition, and result	of the we esults. If th tt in the w of shots, as of pumpi	ere were any rell, give size If plugs or br ng or bailing.	changes made in the and location. If the idges were put in the
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Sundry Notices and Reports on Wells Arizona

Suitely Montes and	Permit No. 0. P. 44404
Notice of intention to drill.	
Notice of intention to change plans	i i
Notice of date for test of water shut-off	
Report on result of test of water shut-off	
Notice of intention to re-drill or repair well	1 .
Notice of intention to shoot	· · · · · · · · · · · · · · · · · · ·
Subsequent record of shooting	100
Record of perforating casing	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Notice of intention to pull or otherwise alter casing	1 3
Notice of intention to abandon well	
Subsequent report of abandonment	
Supplementary well history	•
-	1
(Indicate above by check mark nature of report, noti	
(material above by their main harare of report, non	February 6
Following in a (Notice of intention to do much) as	19
Following is a (Notice of intention to do work) of (Report of work done)	(lease)
	•
Well No. Creager State #14-6 Sec. 6	Ta 19Na R 25E. S.R.B. & M. Township
<i>Section</i>	
! (N)	
The well is located feet of	South line and 3301 feet
• 5	(E)
•	(MR) of west line of
Section N.W. # 2 section	
The elevation of the derrick floor above sea level is	(5720feet
	LAN OF WORK
indicate mudding jobs, cementing points, and all othe	show sizes, weights, and lengths of proposed casings;
Total Depth 3432 feet. Plan to place plu	
Well is to be turned over to John Jones,	Rancher, Holbrook for developement as
water well. 13 3/8 0.D. 54.5#, Grade J-	55 was cemented at 795 feet.
	######################################
-	

Approved February 10, 1949	Company GENERAL PETROLEUM CORPORATION
0000170	
4. C. Maran	By Silas C. Brown
State I and Commissioner	Agent
State Land Commissioner	P.O. Box 2745. Phoenix. Arizona
Arizona State Land Department	Address P.O. Box 2745, Phoenix, Arizone
Address	and, com
	in triplicate to the Commissioner for approval.

0944404

ARIZONA STATE LAND DEPARTMENT

Lease or ARIZONA Permit No. 0. P. 44404

Lessee's Monthly Report of Operations

gent's Address		mary		194	9			
-					Compa	ny GENERA	L PETROL	EUM CORPORATION
• .					Signed			********************************
elephone		•		r.	Agent's	s Title		
Section Fown- and 14 ship	Kange	Days Pro- duced	Barrels of Oil	Gravity	Cubic Feet of Gas (in Thousands)	Gallons of Gasoline	Barrels of Water (if None so State)	Remarks (if drilling, depth; shutdown, cause; date and resu of test for gasoline content of gas)
	25 E.					•••••		Drilling Well
1				<u> </u>		*************************		
				<u> </u>				
					30, 1949,			
	Tota	Foots	ge in J	enuary	2285 feet.	eccine A		
	11	nole to	total	depth o	report.	cantiiR	¥.)•	
								. ,
					was locat		feat.	
	Top	of Sups	i Forma	tion wa	s located	at 1590 fee	T.	
					op of the peration to			
	plug	s were	used to	regair	circulati	on. Drill	ng opera	tions
	······································	- proce∈	308B08	organg	ro program	-87100-fus	Tilgela:	1.
			he hole	3 3190	feet 00 1	5 Minute 19	om the	
	vert	ical.		ļ.·	J		İ	

0944409

ARIZONA STATE LAND DEPARTMENT

Lease or ARIZONA Permit No. 0. P. 44404

Lessee's Monthly Report of Operations

	onth of	Jan	usty		1949)			, ,
gent's A	ddress			***************************************	**********	Compa	ny GENERA	L PETROL	EUM CORPORATION
					••••••	Signed	⁻ --		•
elephone		***********		**********		Agent	Title	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
Section and 14 of 14	Town- ship	Range	Days Pro- duced	Barrels of Oil	Gravity	Cubic Feet of Gas (in Thousands)	Gallons of Gasoline	Barrels of Water (if None so State)	Remarks (if drilling, depth; is shutdown, cause; date and result of test for gasoline content of gas)
1. V. 1	19 N.	23 E.							Drilling Woll
		Total	Foota	ge in Ja	nuary	30; 1949, 2285 feet.			
		124" 11" h	hole to	o 1300 f total d	set fr	report.			
		Top o	£ Coac	nino For	mation	was located	d at 1127	fest.	
**************************************		Lost and t	oiroul o 1650	ation at	the tused o		upai Forme	tion ement	
		-beve-	p roses y of t	d ed ~acco	rding-		since that	-interv	
eo NOTE:	Report (on this	uns or form is ate witl	sales of g	asoline for eacl	during the n	nonth. (Writ	e "no" w less of the	nere applicable.) e status of operations, an month, unless otherwis
	l:					,	GENERAL PET	CROLEUM.	ORPORATION

0944404

ARIZONA STATE LAND DEPARTMENT

Lease or ARIZONA Permit No. 0. P. 44404

Lessee's Monthly Report of Operations

										ng and producing wells)
gent's A	ddress		·				Compa	ny GENERA	L PETROL	EUM CORPORATION
••••••		••••••					Signed			
'elephone	• .									
Section and ¼ of ¼	Town- ship	Range	Days Pro- duced	Barrels of Oil	Gravity	l of	c Feet Gas ousands)	Gallons of Gasoline	Barrels of Water (if None so State)	Remarks (if drilling, depth; if shutdown, cause; date and result of test for gasoline content of gas)
4. N. T	19 N.	25 B.							- Daire,	Drilling Well

*******			 				***********			
		Total Total	Depth Foots	se of J	anuary	30,	1949,	3310 feet.		
		1824	hole t	total d	set fr	ma 13	3/段章	'	95.	
************	-	Brief	Histo	ryı						
••••		Top o	2 Conc	nino For	testion	WAR	Inaut.	A 44 1197	PAGA	
************		Lost	olrewl	i Format ation_at	the t	B LOO	ated a	1590 fee	t.	
		EXTO C	אר אר א	7600 G8	maed o	perat	10n 11	roubles. O	exent.	•
		pave	WO TO	dag eve q	regain raine	circ	ulatio	n. Drilli	ng opere	tiche 1
		OUT AG	a or a	he hole	₹ 5190	feet	0° 1	directe fr	om the	
		verti	gal,						**	
OTE:'	There w	ererı	no uns or s	ales of g	runs or	sales during	of oil	no	e "no" wh	runs or sales of gas
OTE:—I	Report o filed in	n this triplica	form is ate with	required	for each	caler	ıdar m	onth records	ace of the	status of operations, and month, unless otherwise
pproved			•			٠.	6	eneral pet	ROLEUM O	ORPORATION
							·	- N 8	Comp	
			Jaie				By.	Solut R	Smal	_ Geologiat
			rate				TIME		Titl	130010010E

0144404

Operator: General Petroleum Corporation

Well No:

Creager-State #14-6
321'N 348 t
330'N & 330'E of W 1/4 corner - Sec. 6-T19N-R23E
Navajo County, Arizona (which becation Location:

Elevation: 5720' (derrick floor)

Spud: December 17, 1948

Abandoned: February 17, 1949

Total Depth: 34321

Plugged Depth: 1493

Junk: None

Geological Markers

Top Chinle	101
Top Shinarump	595
Top Moenkopie	6741
Top Kaibab	1124
Top Coconino	1127
Top Supai	15901
Top Granite	3353°

Casing Record

20" set at 12'
13-3/8" set at 775' with 597 sax

Electric Log Depths: Surface to 3432

(Eustan)

to be distrib

GENERAL PETROLEUM CORPORATION

Field Navajo County (Arizona)

Well No. Creager State 14-6

T 19N , R 23E , G & SR B. & M.

Silas Brown Signed

March 29, 1949

Title Agent

This well was drilled by K. L. Kellogg and Sons, drilling contractors, using rotary equipment.

All measurements were taken from the kelly bushing 19.9' above the cellar wall.

1948

DRILLING AN EXPLORATORY WELL

11-29 to

Rotary equipment was moved in and rigged up.

12-17

12-18 17-1/2" hole was spudded December 17, 1948 and drilled to 795, circulation to having been lost and regained at 647, and 785.

12-26

12-27 A Schlumberger electric log was run from 140' to 795'.

12-29 CEMENTING 13-3/8" CASING AT 7951

13-3/8" O.D., new, 54#, J-55, short T&C casing was cemented at 795' with 530 sax of El Toro construction cement, the 1st 300 sax being mixed with 3% Aquagel. Return circulation was spotty. (Mixing time 42 minutes, displacing time 30 minutes, slurry weight not recorded, final pressure 300#. Finished at 11:55 A.M. by Halliburton cementers). 66 sax of cement was pumped in around the outside of the 13-3/8" casing, bringing cement to the surface.

The casing was landed in the cellar and the drilling control head installed. The casing was tested with 600# for 15 minutes. O.K.

12-30 12-1/4" hole was drilled and spot cored 795 1320 and 11" hole drilled and to spot cored 1320'/3432'. Circulation was lost and regained while drilling 2/5/49 at 1100', 1136', 1307', 1498', 1570', 1633', 1655', and 2633'. No showings of oil or gas worthy of a test were encountered.

2-6 & A Schlumberger electric log was run 795'/3432'.

Page 2

Operator GENERAL PETROLEUM CORPORATION Field Navajo County (Arizona)

Well No. Creager State 14-6 Sec. 6 , T 19N , R 23E, G & SR B&M

Signed Silas Brown

Date March 29, 1949

Title Agent

ABANDONING

BRIDGING WITH CEMENT 1630'/1513'

With open end drillpipe at 1630', one hundred sax of El Toro construction cement was pumped in and displaced. (Mixing time 24 minutes, displacement time 8 minutes, slurry 112#. Completed at 10:25 P.M. with rig pumps).

After approximately 8 hours, stringers of cement were found 1580'/1630'.

75 sax of El Toro construction cement, with 3% Aquajel flakes, was pumped in at 1630' and displaced with 19 barrels of mud. (Mixing time 25 minutes, displacing time 5 minutes. Completed at 2:55 P.M. with rig pumps). After 11 hours and 50 minutes the top of the plug was located at 1513'. The locating of the plug at 1513' was witnessed by T. R. Cochran, of the Arizona Highway Patrol and Loyd Baker, Deputy Sheriff. General Petroleum witness was Al Saulsbury, drilling foreman.

- 2-8 The mud was circulated out of the hole from 1513' with water.
- 2-13 8 feet of 13-3/8" casing was welded on to the top of the existing 13-3/8" casing, bringing it to the ground level. The well was capped and abandoned February 13, 1949.

CONDITION OF HOLE AS ABANDONED

CASIKG RECORD

13-3/8" cemented at 795! (No water shut-off test)

TOTAL DEPTH: 3432

PLUGGED DEPTH: 1513

JUNK: None

HOLE SIZE SUMMARY:

17-1/2" surface to 795'
12-1/4" 795'/1320'
11" 1320'/3432'

STATUS: Abandoned

B. K. Webb March 29, 1949

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Page 1

COMPANY GENERAL PETROLEUM CORP. LEASE

CREAGER STATE #14-6 WELL NO

ELEVATION 5720' d.f. LOCATION: 330'N & 330'E of W 1/4 corner Sec. 6-19N-23E

SPUDDED Decmeber 17, 1948 COMPKERER February 17, 1949 Abandoned: BOTTOM RECY **FORMATION** DITCH SAMPLES 401 Surface soil to 10' TOP CHINLE FORMATION AT 101 No samples taken. 40 50 Sand, white, fine to medium grained with shale, red, fissile. 50 60 Sand, white, medium to coarse with grey shale. 80 Sand, as above. 100 Sand, as above with considerable grey shale and much bentonite. 100 110 Sand, grey to white, medium to few coarse grains, round to sub-angular with some bentonite and shale. 110 130 Sand, as above. 130 140 Sand, as above. First electric log did not record above this point due to lack of fluid. 140 150 Shale, red, fissile. **15**0 160 Shale, red, fissile, with sand, white, coarse to medium angular to sub-round. 160 180 Sand and shale, as above. 190 Shale, red, fissile, with minor sand and siltstone fragments. Sand, white to grey, medium to coarse, angular to angular grains quartzitic composition. 200 210 No Sample. 210 220 Shale, variegated color, fissile with sand, white, medium grained, sub-angular. 220 230 Variegated sandy shale (Painted Desert Section). 230 540 Sandy shale, as above. Colors wary - white, grey, red, 5/10 Sandy shale, with streaks of siltstone, red, massive. 250

COMPANY GENERAL PETROLEUM CORP.

LEASE CREAGER_STATE #14-6

Page 2 WELL NO.

ELEVATION 57201 d.f. LOCATION: 330'N & 330'E of W 1/4 corner Sec. 6-T19M-R23E S.R. B&M

TOP	BOTTOM	REC'Y	FORMATION
250 1	2601		Variegated sandy shale, as above with micaceous red
_		.	siltstone.
260	280		Sandy shale, as above with siltstone.
200	200		potter attere. We whose sint silesfolte.
280	290		Sand, white, poorly indurated, sub-round, sub-angular,
			arkose composition.
290	300		Sand, as above with variegated silty shale.
300	310		Shale ower and white finally with and an above
, ,00)10		Shale, grey, red, white, fissile with sand, as above.
310	320		Sand, white to buff, poorly cemented, sub-angular,
			medium to coarse grains with shale, red and grey.
320	330	,	Shale, grey, fissile with white fragments of clay.
330	3 ¹ 10	`	Challe as about
مرر	٠,٠٠٠		Shale, as above.
340	350		Sand, varied color- red predominate. Angular to sub-
			angular, fine to medium grained micaceous.
350	360		Sand, as above with grey shale fragments.
360	270		
500	370		Sand, as above with increase in shale.
370	380		Shale, red to grey fissils with sand, small amount, as
ļ			above.
380	390	•	Shale, as above.
700	1100	•	
390	400	-	Siltatone, dark maroon, massive, with very fine crystals of sand, micaceous.
 •			
1 00	410		Siltatone, as above with bentonite.
410	420		Siltstone, vary colored with little bentonite and few
			sand grains.
420	¥30		Siltstone, red, massive with fragments of white silt-
			stone and some sand grains.
430	7††O		
1			Siltstone, as above with bentonite.
##O	450	·	Siltstone, as above with bentonite.
¥50	470		Siltstone, as above with bentonite. Survey at 470
			15 minutes.
1404			

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FORM 1672

COMPANY GENERAL PETROLEUM CORP.

LEASE CREAGER STATE #14-6

WELL NO.

ELEVATION 5720' d.f.

LOCATION: 330'N & 330'E of W 1/4 corner Sec. 6-T19N-R23E S.R. B&M

TOP	воттом	RECY Abandoned; FORMATION
70 t	480 :	Siltstone, as above.
80	11 9 0	Siltstone, dark marcon, massive, micaceous with red(brick) shale, fissile.
90	500	Siltatone, as above with fragments of red shale and dark grey shale.
00	510	Siltatone and shales as above with increase of grey shale.
10	520	Shale, gray, dark fissile with gray and white siltstone.
20	540	Shale and siltstone, as above with bentonite.
,1 0	550	Shale, grey, fissile with few conglomerate pebbles.
550	560	Shale, grey, fissile with sand grains and much Cl., minor amount of siltstone, dark marcon, massive.
60	570	Siltstone, dark grey, massive with coarse crystals of quartz and chert disseminated through the silt matrix.
70	580	Siltstone, as above.
80	590	Siltstone and shale, variegated to dark red color, fissile, micaceous, bentonitic, few grains very fine, white sand.
590	600	Sandstone, white, poorly cemented, angular to sub-round, grains with streaks of red clay and shale. Sand is arkose. Schlumberger pick TOP OF SHINARUMP FORMATION AT 595 ft.
500	610	Sandstone, as above with increase of grain size. Shale and clay present in smaller amount.
510	620	Red conglowerate pebbles, shale, angular with a few red chert fragments with sandstone matrix as above.
20	630	conglowerate, buff to yellow color, arkose composition, granule grain size, sub-round to angular matrix. Sandstone, buff, poorly cemented.
30	640	Conglomerate, as above with increased amount of sand- stone, arkosic, grey to buff.

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COMPANY GENERAL PETROLEUM CORP. LEASE CREAGER STATE #14-6 WELL NO

ELEVATION 5720' d.f. LOCATION: 330'N & 330'E of W 1/4 corner Sec. 6-T19N-R23E S.R. B&M

SPUDDED	Decemb	er 17,	1948 Control February 17, 1949 Abandoned:
ТОР	воттом	REC'Y	FORMATION
6401	650 1		Conglomerate and sandstone as above with small amount micaceous grey clay.
650	660		Conglomerate and sandstone, as above. (Poor sample).
660	670		Conglomerate and sandstone, as above.
670	680		Siltstone, dark red, massive. TOP OF MOENKOPIE FORMATION at 674 ft.
680	69 0		Siltstone, as above with streaks of sandstone, white, poorly cemented, porous, quartzitic.
690	700		Siltstone, as above with out sand streaks.
700	710		Siltstone. dark red, as above with angular grains of buff, white, yellow arkose sand.
710	720		Siltstone, as above.
720	730		Siltstone, dark red to maroon, massive with streaks of shale, red, fissile.
730	740		Siltstone, as above.
740	750		Siltstone, as above.
750	760		Siltstone, as above with shale, brick red and sand, white, medium grained with cement of reddish material.
760	770		Shale and siltstone, brick red to maroon, micaceous.
770	780		Shale and siltstone, as above.
780	785		Siltstone, as above with high content of mica.
785	790		Siltstone, as above, micaceous, some shale.
790	7 95		Circulation sample at 795' siltstone, dull red with some fine to very fine grains of white arkose sand.
795	800		No Sample - cement contamination - Survey at 795 - 5 min.
800	810		Siltstone, as above.
810	815		Siltstone, as above.

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Page 5
LEASE CREAGER STATE #14-6

Form 1672

COMPANY GENERAL PETRLEUM CORP.

5720' d.f. LOCATION: 330'N & 330'E of W 1/4 corner Sec. 6-T19N-R23E S.R. B&M ELEVATION

	SPUDDED	Decemb	er 17,	1948	Composition February 17, 1949 Abandoned:
ſ	ТОР	BOTTOM	RECY		FORMATION
	815	835	50,1	Siltstone,	CORE #1 815 -835 Rec. 20 mottled red and green, well indurated angular grains, well sorted, massive with white nodules of medium grained sand.
	835	865	-	Siltstone,	mottled red and green. In the red material mica is present in minor amounts with <u>sand</u> , white, fine grained.
	g65	885 (Top	20' 11')	Siltstone,	mottled red and green. Silt size to a few very fine grains of sub-angular to sub-round shape. Well indurated, well sorted. Predominate mineral Quartz, massive, tight.
		(Next (Botton	¥ነ) 5ነ)		red, other characteristics the same as above. s top 11 feet.
	885	890		Siltstone,	mottled red and green.
	890	900		Siltstone,	as above with gypsum in small amount.
	900	910		Siltstone,	as above and sand, brown, medium to fine grains with little gypsum.
	910	920	-	Sand, brown	nish grey, medium to fine, porous, fair induration, arkose composition.
	920	930		Drilling but Then silts	reak indicated sand, as above, stopped at 9241. tone, brown-red with mica and considerable gypsum.
	9 30	950		Siltstone,	with gypsum, as above.
	950	960		Siltstone,	as above.
	960	970		Siltstone,	as above.
	970	980		Sand, grey	, fine to medium grained, angular to sub-round with siltstone, as above.
	980	990		Siltstone,	red, massive with shale partings and gypsum.
	1000	1010		Siltstone,	red to dark maroon. Red crystals of Quartz are present in the silt matrix with gypsum and small amount of bentonite.
		And the state of t			

COMPANY GENERAL PETROLEUM CORP.

Page 6
LEASE CREAGER STATE #1406

ELEVATION 5720' d.f. LOCATION: 330'N & 330'E of W 1/4 corner Sec. 6-T19N-R23E S.R. B&M

29000ED	December	r 17, J	1949 Abandoned: February 17, 1949
TOP	BOTTOM	RECY	FORMATION
1010	1020		Siltstone, as above with shale, red, fissile.
1020	103Ô		Siltstone and shale, as above with sand, white, medium grained, micaceous.
1030	1040		Siltstone, shale and sand, as above.
1040	1050		Siltstone, dark marcon, micacsous. Little gypsum.
1050	1060		Siltstone, as above with large quantities of gypsum. (The silt is calcareous).
1060	1080		Siltstone, as above.
1080	1090		Siltatone and shale, red, gypsum present. Survey at 1057' hole vertical.
1090	1100	Advisor of the second of the s	Siltatone and shale, as above with sand, brown-red, fine to medium, sub-angular grains, micaceous, calcareous.
		10 mara mara mara mara mara mara mara mar	Circulation sample at 1100 feet. Sand, brownish-red, fine to medium, sub-angular grains, micaceous, calcareous.
1100	1120		Sand, as above.
1120	1125		Sand, as above with appearance of limestone in large amounts, little chalk. Drilling time per foot slowed down. (Top of KAIBAB at 1124)
			Circulation Sample at 1127 feet. Sand, white, medium to a few coarse grains, massive, well indurated, angular to sub-angular, well sorted. Quartz predominate mineral. Fair porosity, fair K- Top of COCONINO at 1127 feet.
1127 1140	1140 1147	0' 7'	Missed. Sand, white, with slight brown stain, fine to medium grained, hard, sub-angular to rounded, well sorted, quartz composition, cross bedded, tight. No show gas or oil.

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COMPANY GENERAL PETROLEUM CORP.

LEASE CREAGER STATE #14-6

WELL NO

ELEVATION 5720' d.f. LOCATION: 330'N & 330'E of W 1/4 corner Sec. 6-T19N-R23E S.R. B&M

SFUDDED December 17, 1948

ELEGIZIONE P

Abandoned: Februar

February 17, 1949

1	BOTTOM	RECY FORMATION
		CORE #4 1151-1162' Rec. 3'
		(Unable to determine missing section) Sand, shale with slight brown stain, hard, rounded, well sorted, quartz predominate with mica in small flakes, bedding massive, fair porosity & K.
1162		(Mud invaded core) no fossils. Drilling ahead for 100 feet or to a drilling break from hard sand- then core.
1162	1200	Sand, white, with slight brown stain, hard quartz, rounded, well sorted, brown stain due to presence of flesh color quartz grains.
1200	1230	Sand, as above.
1230	1260	Sand, as above with stringer or lenses of sand, flesh color, with same lithic characters as above. Survey at 1260 feet 30 minutes (0° 30°).
1260	1270	Sand, as above with increase in sand, flesh to red color, fine to few medium, sub-angular grains-color due to red quartz crystals, silica cement and small amount iron oxide.
1270	1280	Sand, white and flesh red, as above.
1280	1290	Sand, as above.
1290	1300	Sand, flesh red, fine to medium grained with sand, white.
		Circulation Sample at 1300 feet. Sand, flesh red with minor amount sand, white, as above.
	 	GORE #5 1300-1320' Rec. 12'
1300	1305	Lost circulation while coring at 1308. Sand, reddish to flesh brown, fine to medium, hard, sub- angular to sub-round, well sorted quartz, cross- bedded, fair porosity and K. All quartz grains are white.
1305 1312	1312 1314	Missing. Sand, brick red, fine to medium grained, well sorted, quartz, bedding indistinct, fair porosity & K, quartz grains are red,-translucent, iron oxide cement.
	,	Sand, as above with lenses of brownish-white sand,

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FORM 1672

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COMPANY GENERAL PETROLEUM CORP.

LEASE CREAGER STATE #14-6

WELL NO.

ELEVATION 5720' d.f. LOCATION: 330'N & 330'E of W 1/4 corner Sec. 6-T19N-R23E S.R. B&M

SPUDDED December 17, 1948 XXPONIKEXXED February 17, 1949 BOTTOM | REC'Y **FORMATION** CORE #5 (continued) 1316 Sand, as described 1300'-1305'. 1319 1320 Missing. 1320 1350 Sand, as above. CORE #6 1350'-1370' Rec. 9' 1350 Sand, brick red, fine to medium, well indurated, rounded 1353 to sub-rounded with few sub-angular grains. Quartzite and Limonite predominate with some biotite. Bedding indistinct. Good porosity and K. No fossils, appears to be Wet. 1353 1355 Sand, as above with stringers of sand, with paler red color, also black carbon spots. (Do not give reaction with Carbon-Tet) Spots are found only in two inch zone. 1356 Sand, as above with red siltstone partings. 1357 Sand, light brick red, other characters as of 1350'-1353'. 1359 1359 1370 Missing. 1370 1420 Sand, as above, in last core. CORE #7 1420'-1440' Rec. 17' 1420 Sand, barren, brick red to flesh red, well indurated, 1437 17' rounded to sub-rounded with a few sub-angular grains, well sorted, quartz predominate mineral. bedding indistinct, good porosity and K, siltstone partings. (No show gas or oil). 1437 1440 Missing. 1440 1500 Sand, as above. 1505 1510 Sand, as above with shale, purple, fissile partings. 1517 Circulation sample. Sand, brick red to flesh red. Good porosity and K. 1510 1520 Sand, as above. 1520 1525 SAND, TAR. This is sand as described above with heavy Asphaltic material. Distribution spotty. Cuts with carbon tetra chloride. Distinct black discoloration of fluid. 1530 Sand, as above. No tar found.

Continue to C

FORD 1672

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Page 9
COMPANY GENERAL PETROLEUM CORP. LEASE CREAGER STATE #14-6 WELL NO

ELEVATION 5720 d.f. LOCATION: 330 N & 330 E of W 1/4 corner Sec. 6-19N-23E

TOP	BOTTOM	RECY	FORMATION
1530	-		Circulation Sample.
			Sand, as above- No evidence of TAR.
1530	1550	51	CORE #8 1530-1550 Rec. 51 Sand, brick red to lighter red, fine to medium, well indurated, well sorted with siltatone partings. Sand is barren. Good porosity and K. A show of gas bubbles appeared for a few minutes in the mud.
			CORE #9 1550-1570 Rec. 17
1550	1563	13'	Sand, well indurated, fine to medium, well sorted, frosted quartz with feldspar and mica in small amounts. Bedding indistinct. Good porosity & K, siltstone partings No show.
1564	/-		Sand, as above with brick red color.
1565 1568	1567 1570	21 01	Sand, as top 13'. No show. Missing.
1570	1580		Sand, light red, fine to medium with quartz granules, white, frosted.
1585	1595		Sand and quartz, as above, with small amount of calcareous shale. TOP SUPAI 1590
1595	1600		Quartz granules as above with shale, red, fissile, limey.
1600	1625		Samples indicate decrease in amount of quartz and definite presence of shale, red, fissile, limey. Coring ahead to determine if not in the top of the Supai.
1625			Sand, red, fine to medium, hard, quartz predominate mineral, good porosity and K. No show gas or oil.
icar			No taste or odor.
1626	1633		Missing. Lost circulation at 1627' and again at 1633'.
•			Survey at 1625; 1°.
1633	1660		Due to lost circulation problem no returns were obtained that can be placed in the log. A few returns indicate: Sandstone, red with granules of quartz and a predominance of red, silty, micaceous shale.

Marie Co.

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February 17, 1949

COMPANY

SPUDDED

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GENERAL PETROLEUM CORP. LEASE

December 17, 1948

CREAGER STATE #14-6

ELEVATION 5720' d.f. LOCATION: 330'N & 330'E of W 1/4 corner Sec. 6-719N-R23E S.R. B&M

CHAPLEFERX

BOTTOM RECY **FORMATION** CORE #11 1660'-1670' Rec. 10" Wire Line - Mercury Top Cement. Sandstone, red, fine to medium, hard, angular to subangular, well sorted, quartz- bedding indistinct. Good porosity and K. No show, with spots of pure white sandstone with similar lithic character. CORE #12 1670'-1679' Rec. 6' "Wire Line - Mercury" 1670 1676 61 Sandstone, dark red, fine to medium, fair induration, poorly sorted, quartz and iron oxide predominate. Porosity poor with spots of white sandstone, as above. 1676 1679 01 Missing. No show gas - oil. 1679 1689 No Sample. 1689 1700 Sandstone, shaley, dark red with white spots of sandstone. 1700 1710 Red shaley sandstone, as above. 1710 1730 Shale and sandstone, as above. 1730 1740 Red shale and sandstone, as above with green shale mottling. 1740 1760 Shale, red, fissile with few floating sand grains and mica. Shale, red, as above. 1780 1800 Shale, red, fissile, as above. 1800 1810 Shale, red with green shale partings. 1813 1820 Red and green shale, as above. 1850 1830 Shale, red, fissile with some silt grains. 1830 1840 Shale, red, as above. 1840 1850 Shale, red, fissile with shale, green and gypsum

Shale, as above with gypsum,

FORM 1672

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COMPANY GENERAL PETROLEUM CO.P. LEASE CREAGER STATE #14-6 WELL NO ELEVATION 5720' d.f. LOCATION: 330'N & 330'E of W 1/4 corner Sec. 6-T19M-R23E S.R. B&M

SPUDDED	December	r 17, 1	1948 February 17, 1949 Abandoned:
TOP	воттом	RECY	FORMATION
1863	1883	201	Shale, red and green mottled, with red color predominate, silt to a few very fine grains, hard, well sorted, micaceous, fissile. Tight, veins of gypsum up to 1/2" in thickness. No show gas or oil.
1883	1900		Shale, red and green with gypsum, as above.
1900	1910		Shale, as above.
1910	1920		No Sample.
1920	1940		Shale, red with gypsum and green shale, as above.
1940	1950		Shale, green, fissile with some fine sandstone, red.
1950	1960		Sandstone, red with green and red shale and siltstone. Some gypsum.
1960.	1980		Sandstone, as above.
1980	2000		Sandstone, with shale and siltstone, as above.
2000	2010		Sandstone, with shale and siltstone, as above and white sandstone, medium grained, silica cement.
2010	2030		Sandstone, as above.
2030	2050		Sandstone, with shale and siltatone, as above, white, medium sandstone.
2050	2060	101	Sandstone, red, very fine to fine, soft, well sorted quartz and mica with large amount Limonite cement. Bedding indistinct with partings of
2060	2070	10'	red clay. Poor porosity, no K. Sandstone, as above with partings of sandstone, grey- green, hard, Quartz, tight, - Sandstone con- tains salt. Entire Core barren.
2070	2115		No Samples Taken.
2115	21.25		Sandstone, as above with green and red shale, fissile. Silt particles and clay, red, iron oxide matrix. (cemented).
2125	21.35	***	Shale, grey-green, fissile with clay and silt, red.
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COMPANY GENERAL PETROLEUM COMP. LEASE CREAGER STATE #14-6

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WELL NO.

ELEVATION 5720' d.f. LOCATION: 330'N & 330'E of W 1/4 corner Sec. 6-T19N-R23E S.R. B&M

3PUDDED	Decembe	r 17,	1948 Abendoned: February 17, 1949
TOP	ВОТТОМ	REC'Y	
2135	2145		Shale, grey-green, fissile, calcareous with decrease in clay and silt.
2145	2155		Shale, grey-green, fissile, slightly calcareous.
2155	2160		Shale, grey-green, fissile, slightly calcareous with silt to very fine particles floating.
2160	2170		Shale, as above with sandstone, very fine to medium, highly calcareous.
2170	2180		Shale, with sandstone, calcareous, as above.
2180	2190		Shale, grey-green, fissile with sandstone, grey, fine to medium, highly calcareous.
2190	2200		Shale, with sandstone, as above.
2200	2210		Shale, grey-green, fissile, small amount sandstone and siltstone, slightly micaceous.
2210	2230		Shale and siltstone, as above with presence of red siltstone.
2230	2250		Siltstone, red, massive with small amount shale, grey- green, fissile.
2250	2260		Siltstone, grey-green with some red and shale, grey-green, fissile.
2260	2270		Siltstone, as above with sandstone, green, medium grains, glauconitic.
2270	2290		Siltstone, as above with shale.
2290	2300		Siltstone, as above with shale,
2300	2320		Siltstone, as above, some shale.
2320	2330		Siltstone with shale, as above.
2330	2340		Siltstone, grey-green with some red and green shale, calcareous.
2340	2350		Sittatone and thale, as above.
2350	2360		Siltstone and shale, as above.

(0.00)

FORM 1672

COMPANY GENERAL PETROLEUM CORP.

Page 13 CREAGER STATE #14-6 WELL NO.

ELEVATION 5720' d.f. LOCATION: 330'N & 330'E of W 1/4 corner Sec. 6-T19N-R23E S.R. B&M

SPUDDED	Decembe	r 17,	1948 COMMINSTER February 17, 1949 Abandoned:
тор	воттом	REC'Y	FORMATION
2360	2370		Siltstone and shale, as above.
2370	2380		Siltstone and shale, as above, shale has salty taste.
2380	2390		Siltstone, as above with salty taste with fragments of black siltstone.
2390	5400		Siltstone, as above.
5/100	2410		Siltatone, as above- grey-green and black with minor amount red shaley siltatone.
5,115	2420		Siltstone and sandstone, grey-green and red massive with minor amount red shale partings.
2420	2430		Siltstone, red, massive with green siltstone with sandstone, red, very fine to fine.
2430	SjijtO		Siltstone with sandstone, as above with more green.
5j1 _j 10	2450		Siltstone with sandstone, as above (Mud contains sand grains that are not Coconino and may be bedded within the siltstone).
2450	2460		Siltstone, as above with the above sand very fine to fine, white to reddish.
2460	2470		Siltstone, as above and sandstone.
2470	2480		Siltatone, grey-green with floating grains of Quarts, granule size with minor amount of red shale and siltatone and sandstone.
5,180	5490		Siltstone and sandstone, grey-green, as above.
2490	2500	-	Siltstone, red and grey-green, as above.
2500	2520		Siltstone and sandstone, red with green mottling. Mottling due to salt content.
2520	2530		Siltstone and sandstone, as above.
			CORE #15 2530 -2550 Rec. 4' Unable to determine missing section.
			Sandstone, red, very fine to a few fine grains. Fair induration, well sorted, Quartz, mica and Limonite predominate, bedding indistinct, Poor porosity and K with partings of silty (continued)
11. 11			

FORM 1672

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COMPANY GENERAL PETROLEUM COMP. LEASE CREAGER STATE #14-6 WELL NO.

ELEVATION 201 d.f.

LOCATION: 330'N & 330'E of W 1/4 corner Sec. 6-19N-23E

TOP	воттом	RECY	Abandoned: FORMATION	_
				_
2550	2560		Sandstone, red, very fine to fine with siltstone and shale partings. Few spots of salt.	
2560	2570		Sandstone, with siltstone, shale and salt, as above.	
2570	2590		Sandstone, with siltstone, shale and salt, as above.	
2590	2600		Sandstone, with siltstone, as above and sandstone, purs white. (Small spots within the red.)	
2600	561 0		Sandstone, with siltstone, as above.	
2610	2620		Siltstone, red to grey-green with sandstone.	
2620	2630		Sandstone, red, very fine to fine, with siltstone and shale, red.	
2630	2640	<u> </u>	Lost circulation. Returns no good.	
2640	2650		Sandstone, red, very fine to fine with siltstone, red, massive and shale, red, fissile with a few spots of green color salt.	
2650	2660		Sandstone with siltstone and shale, as above.	
2660	2670		Sandstone, as above with shale, dark grey, fissile, hard.	•
2670	2680		Sandstone and siltstone, with some shale.	
2680	2690		Sandstone, red, very fine to fine.	
2690	2700		Sandstone, red, as above with sandy shale, dark grey, fissile, with floating quartz grains. (Drilled about 5 times as hard as material above 26901).	
2700	2707 (Top	7° 3')	Sandstone, red, very fine to fine, hard, angular to sub- angular grains, well sorted Quartz with mica cement by Silica and Limonite-Bedding in-	
	(Bottom	41)	distinct, porceity poor with siltstone part- ings and spots of green salt. Top 6"- Sandstone, white, very fine, very hard, angular to sub-angular, Quartz with Mica (Biotite)- Silica cement. No bedding - No porosity or K.	
		İ	(continued)	

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COMPANY GENERAL PETROLEUM CORP.

LEASE CREAGER STATE #14-6

WELL NO.

ELEVATION5720' d.f. LOCATION: 330'N & 330'E of W 1/4 corner Sec. 6-19N-23E S.R. B&M

SPUDDED December 17, 1948

Abandoned: February 17, 1949

		Abandoned:
ТОР	моттом	REC'Y FORMATION
ļ	•	CORE #16 (continued)
j		Next 2 feet-Sandstone, red, very fine to fine with silt-
į		stone as in top 3' of core.
i		Next 6" Sandstone, grey-green, very fine to fine,
i		very hard, angular to sub-angular. Quartz
		Silica cement. Cross bedded, no porosity or K. Mottling of colors.
		Bottom Foot- Sandstone, red, as above with miltstone, salt.
2707	2717	Missing.
		(Entire Core Barren)
2720	2730	Sandstone, red, very fine to fine, hard with siltstone
•	1	and green spots. Fragments of hard, grey-
	-	green and white sandstone, as above.
2730	2740	Sandstone, as above.
2740	2750	Sandstone, as above.
2750	2760	Sandstone, red, hard with red siltstone and a few frag-
		ments of hard, fissile, black shale.
<u> </u>	0770	Silterana mander and manders hand of the formation of
27,60	2770	Siltstone, sandy, red, massive, hard with fragments of black shale and hard silica cement white-
		grey sandstone.
Name in the		
2770	2780	Sandy siltstone, red with shale and white sandstone, as above.
		augra.
2780	2790	Sandy siltstone, red as above.
2700	2800	Silterane annay and mession with shift
2790		Siltstone, sandy red, massive with shale.
2 8 00	2810	Siltstone, sandy, dark red, massive, hard with fragments
		of white sandstone.
2810	2820	Siltstone, with sandstone, red, massive, hard, few green
9~		spots. (Do not have salty taste here).
9 00 0	0020	
2820	2830	Poor Sample - Appears to be siltstone, as above.
2830	58,10	Siltstone, sandy, red, massive, slightly micaceous,
-		small amount of gypsum.
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COMPANY GENERAL PETROLEUM CORP.

LEASE CREAGER STATE #1406

WELL NO.

ELEVATION 5720' d.f. LOCATION: 330'N & 330'E of W 1/4 corner Sec. 6-19N-23E

SPUDDED	Decemb	oer 17,	1948 CEMPLETERX February 17, 1949 Abandoned:
тор	воттом	RECY	FORMATION
58,40	2850		Siltatone, red as above with fragments of green, shaley siltatone.
2850	2860		Siltstone, red, as above.
2860	2870		Siltstone, red, massive with sandstone, red and shale, red, fissile.
2870	5880		Siltstone, red with mottling of green.
2880	2890		No Sample.
2890	2898		Siltstone, as above.
2898	2902	յ իր	CORE #17 2898-2918 Rec. 20 Sandstone, dark red, very fine to fine with a few medium grains of mica, hard, angular to subangular, well sorted, indistinct bedding,
2902	2903	11	massive, poor porosity, no apparent K. Conglomerate, dark grey, granule size with medium grains sandy matrix. Predominate minerals quartz, feldspar with gypsum and calcite veins and
2903	2911	gı	fragments of volcanic material. Sandstone, as described 28981-29021 with floating granules of Dolomitic-Siliceous material.
2912 2913			grains of granule size particles. Particles are Dolomitic with siliceous centers and
2917	2915	11	gypsum veins. Sandstone, as above, softer and with shale.
		-	(Entire core barren).
291 9	2930		DARK red shaley <u>siltstone</u> with fragments of sandstone, white, fine. Siltstone contains siliceous dolomitic pebbles. Some gypsum, calcareous, matrix.
2930	2940	:	Shale, siltstone with white sandstone, as above.
2940	2950	1	Shale, siltstone, with sandstone and gypsum, as above.
2950	2960		Siltstone, dark red, shaley with siliceous dolomitic pebbles - some gypsum.
	-		

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COMPANY GENERAL PETROLEUM COMP. LEASE CREAGER STATE #14-6

ELEVATION5720' d.f. LOCATION: 330'N & 330'E of W 1/4 corner Sec. 6-19N-23E

TOP	воттом	REC'Y	FORMATION
20.00			
2960	2970		Siltstone, dark red, as above.
2970	2980		Siltstone, dark red, as above.
2980	2990		No Sample.
2990	3000		Siltatone, as above, having a dark blue cast, micaceous.
3000	3010		Siltstone, as above.
3010	3020		Siltstone, dark red, massive with shale, red, fissile.
3020	3030		Siltstone, as above with a few fragments of limey material, green, hard.
3030	3045		No Samples.
			CORE #18 30451-30491 Rec. 21
Bot	Top 1½; tom 6"		tstone, shaley, red, hard with small veins of gypsum. estone, green-grey, hard, Amorphous, bedding indistinct, poor porosity with mottling of siltstone, red. (Two cones lost in hole).
3050	3060		Siltstone, red with shale and greem limestone.
30 60	3070		Siltstone, dark red, massive with green limestone and red shale.
3070	3080		Siltstone, dark red, slightly micaceous with some shale and gypsum.
3080	3090		Siltstone, as above.
30 90	3100		No Sample.
3100	3110		Siltstone, dark red, slightly micaceous with some gypsum.
3110	3120		Siltstone, dark red, hard, with green limestone and red shale, fissile.
3120	3130		Siltstone, as above.
3130	3140	-	Siltstone, as above.
	3150		Siltstone, as above with fragments of green limestone

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GENERAL PETROLEUM CORP. COMPANY

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CREAGER STATE #14-6 WELL NO.

ELEVATION 5720' d.f. LOCATION: 330'N & 330'E of W 1/4 corner Sec. 6-19N-23E S.R. B&M
Abandoned:

	SPUDDED	December	r 17, 1	Abandoned: 948 Computer February 17, 1949
-	тор	воттом	REC'Y	FORMATION
	3150	3160		Siltstone, as above,
	3160	3170	:	Siltstone, red, shaley.
	3170	3180	1	Siltstone, shaley, red, hard.
	3180	3190		Siltstone, as above.
Į			:	CORE #19 3192'-3196' Cut.4' Rec. 4'
	3192	3194	21	Sandstone, red, very fine to fine, hard with siltstone, and shale, red, partings. Spots of green
	31 94	3196	21	limestone. Sandstone, as above with floating grains of granule black quarts, slickensides.
	3196	3210	:	No Samples.
	3210	3220		Sandstone, light grey, medium to coarse, calcareous, with pyrite crystals.
	3220	3230	1	Sandstone, as above with siltstone, red.
	3230	3240	i : : :	Siltstone, red, hard, with fragments of light grey sandstone, medium to coarse.
	3240	3250	:	Siltstone, red, hard, with shale partings and a few spots of gypsum.
. !	3250	3260		Siltstone, red as above with gypsum and Dolomite.
	3260	3270		Siltstone, red, hard with gypsum and Dolomite.
	3270	3280		Siltstone, as above with gypsum. No Dolomite.
	3280	3290		Siltstone, as above with increased amount of gypsum.
	3290	3292		Siltstone, as above with small amount of gypsum.
				Sandstone, red, very fine to fine, hard, well sorted, some mica flakes, bedding indistinct, poor porosity, apparently little K. Vugs lined with white crystalline Calcite and green mottling of limestone. Red sandstone is slightly calcareous. Entire core barren.
,	329 5	3300		Sandstone, red, very fine to fine, hard, with siltstone, and calcite.

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COMPANY GENERAL PETROLEUM CORP. LEASE CREAGER STATE #14-6 WELL

ELEVATION 5720' d.f. LOCATION: 330'N & 330'E of W 1/4 corner Sec. 6-19N-23E S.R. B&M

SP	UDDED	Decemi	ber 17,	1948 Gamekeren February 17, 1949 Abandoned:
	ОР	воттом	RECY	FORMATION
	3300	3350		Sandstone, red, very fine, hard, as above with siltstone partings and calcite.
	3350	3355		Sandstone, as above with fragments of non-weathered granitic material. TOP GRANITE 3353'
	3355	3360		Biotite Granite
	3360	3375		Biotite Granite, as above.
				CORE #21 3375'-3377' Cut 2' Rec. 0'
				CORE #22 3377'-3378' Cut 1' Rec. 1' Plus the 2' cut in Core #21
				Biotite Granite Essential Minerals: 1. Quartz- pink and white, euhedral crystals up to 3 mm. 2. Potash feldspar - pink Characterizing Accessory Minerals: 1. Biotite - Black, platy.
		·		Minor Accessory Minerals: 1. Pyrite Secondary Minerals: 1. Chlorite as alteration of Biotite
	3378	3400		Biotite Granite
	3400	3410		Biotite Granite
	3410	3420		Biotite Granite
	3420	3430		Biotite Granite
				Drilling Break 3422'-3428' - Circulation Sample indicate no change.
				CORE #23 3431'-3432' Cut 1'
				Recovered only small fragments. Cutters were lost in the hole. Coring time for the one foot was 1 hour and 45 minutes, Biotite Granite: Material was finer grained but the same composition with minute veins of calcite.
	·			TOTAL DEPTH: 34321
p 444	04			

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General Petroleum Corporation Operator:

Well No: Oresger-State #14-6

329 'N & 546 E of W 1/4 corner - Sec. 6-T19H-R25E Hevajo County, Arizona (5W/45W/4/WW/4) Location:

5720 (derrick floor) Ployation:

December 17, 1948 Spa4: Abandoned: February 17, 1949

TOTAL DEPTH: 5452

Junk: None

Top Chinle Top Shinerump Top Moenkopie Top Kaibab Top Goeogino Top Supai Top Grapite 1590

Operator GENERAL PETROLEUM CORPORATION Field Mave jo County (Ariz.)
Well No. Creager State 14-6 Sec. 6, T 19 N, R 23 E, G & S R B & M

Signed Silas Brown

Date March 29, 1949

Title Agent

This well was drilled by K. L. Kellogg and Sons, drilling contractors, using retary equipment.

All measurements were taken from the kelly bushing 19.9' above the cellar wall.

1948

DRILLING AN EXPLORATORY WELL @

11-29 to

Rotary equipment was moved in and rigged up.

12-17

17

12-18 to 17-1/2" hole was spudded December 17, 1948, and drilled to 795', circulation having been lost and regained at 647' and 785'.

12-26

a Schlumberger electric log was run from 140' to 795'.

12-27 to 12-29

CEMENTING 13-3/8" CASING AT 795'

13-5/8" 0.D., new, 54f, J-55, short The casing was comented at 795' with 530 sax of El Toro construction coment, the lat 300 sax being mixed with 3% Aquagel. Return circulation was spetty. (Mixing time 42 minutes, displacing time 30 minutes, slurry weight not recorded, final pressure 500f. Finished at 11:55 A.M. by Halliburton comenters.) 66 sax of cament was pumped in around the outside of the 13-5/8" casing, bringing coment to the surface.

The casing was lamied in the cellar and the drilling control head installed. The easing was tested with 600% for 15 minutes. O.K.

12**-50** to 2/5/49 12-1/4" hole was drilled and spot cored 795 /1320 and 11" hole drilled and spot cored 1320 /3432 Circulation was lost and regained while drilling at 1100, 1136, 1498, 1507, 1570, 1635, 1655, and 2635. No showings of oil or gas worthy of a test were encountered.

2-6 & A Sehlumberger electric log was run 795'/3482'. 2-7

0944404

ABANDONING

BRIDGING WITH CEMENT 1680'/1518'

With open and drillpipe at 1650', one hundred sax of El Toro construction conent was pumped in and displaced. (Mixing time 24 minutes, displacement time 8 minutes, slurry 1126. Completed at 10:25 P.M. with rig pumps.) After approximately 8 hours, stringers of coment were found 1500'/1650'. 75 sax of El Toro comet true tion coment, with 36 Aquajel flakes, was pumped in at 1650', and displaced with 19 barrels of mud. (Mixing time 25 minutes, displacing time 5 minutes. Completed at 2:55 P.M. with rig pumps.) After 11 hours and 50 minutes the top of the plug was lecated at 1815'. The locating of the plug at 1815' was witnessed by T. R. Cochran, of the Arizona Highway Patral, and Loyd Baker, Deputy Sheriff. General Petroleum witness was Al Samlabury, drilling foreman.

2-6 The mai was circulated out of the hole from 1515, with water.

11.

2-15 S feet of 13-5/8" casing was welded on to the top of the existing 13-3/8" casing, bringing it to the ground level. The well was capped and a band oned February 15, 1948.

CONDITION OF HOLE AS ABANDONED

CASING KECORD: 15-5/6" semented at 795' (He water shut-off test)

TOTAL DIPTH: 3432

PLANGERD DEPTH: 1515

JUHE: Rome

CERTAMA

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HOLE SIZE SUMMARY:

17-1/2" surface to 795' 12-1/4" 795'/1520'

1580'/5455'

STATUS: Abendoned

B. K. Webb March 29, 1949

0944404

TOP	BOTTOM	REC'Y	FORMATION
DITC	SAMPLES		
0*	40*		Surface soil to 10° TOP CHIMLE PORMATION AT 10° No samples taken.
40	50		Sand, white, fine to medium grained with shale, red, fissile.
50	60		Sant, white, medium to occaree with grey shale.
60	80		Sant, as above.
80	100	• • •	Sant, as above with considerable grey shale and much bentonite.
100	110 m		Sant, grey to white, medium to few coarse grains, round to sub-angular with some bentanite and shale.
110	150		Sand, at above.
150	140		Sand, as above. First electric leg did not record above this point due to lack of fluid.
140	150	7	Shele, red, fisaile.
150	160		Shale, red, fissile, with sank, white, course to medium, angular to sub-round.
160	180		Sand and shale, as above.
150	190	and the second s	Shale, red, fissile, with minor sand and siltstone fragments.
190	206		Sand, white to grey, medium to coarse, angular to angular grains quartzitic composition.
200-	£10		No Surple.
870	220		Shale, variegated solor, fissile with sand, white, medium grained, sub-angular.
220	250		Variegated sandy shale (Painted Desert Section.)
250	240		Sandy chale, as above. Colors vary - white, grey, red, marcon.
240	250	.	Sandy shale, with atreals of siltstone, red,

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\$0°	260*	Variagated sandy shale, as above with micaecous siltstone.		
260	280	Sandy shale, as above with siltstone.		
180	890	Sand, white, poorly indurated, sub-round, sub- angular, arkees composition.		
190	800	Sand, as above, with variegated silty shale.		
10	51 0	Shale, gray, red, white, fiscile with gand,		
10		Sand, white to buff, peorly computed, sub-engular medium to comme grains with shale, red and		
03	380	Shale, grey, fissile with white fragments of clay		
350	340	Shale, as above.		
340	350	Send, varied color - red predominate. Angular to sub-angular, fine to medium grained micaceo		
55 0	360	Sand, as above, with grey shale fragments.		
560	370	Sand, as above with increase in shale.		
57 0	500	Shale, red to grey fissile with send, small amoun		
200	590	Shale, as abere.		
590		Siltstone, desk marcon, messive, with very fine exystals of sand, missessons.		
roo	410	Siltatone, as above with bentonite.		
L10	420	Siltstone vary colored with little bentonite and few sand grains.		
L20 : `	450 A	Silistone, red, messive with fragments of white silistone and some sand grains.		
650	440	Siltatone, as above with bentonite.		
LAO	450	Siltatone, as above with bestenite.		
450	470	Siltatone, as above with bentonite. Survey at 470° 15 minutes.		

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TOP	BOTTOM	EEC.A	FORMATION
4701	490*	Siltston	e, as above,
480	490	Siltaton	e, dark marcon, massive, micaceous, with red (brick) shale, fissile.
490	500	Siltstop	as above with fragments of red shale and dark grey shale.
5 00	510	Siltaton	e and chales as above with increase of grey shale.
51 0	520	Shale, C	rey, dark fissile with grey and white siltstone.
	•		rentativa (1866) kan di sama di sama di sama di sama di sama di sama di sama di sama di sama di sama di sama d Sama di sama d
520	84 0	Shale ex	d ciltatone, as above with bentonite.
540	55 0	Shale, (proy, fissile with few conglomerate publics.
550	560		prey, fissile, with sand grains and much Cl. iser encunt of siltstone, dark marcon, cassive.
		garaga an Frantsian (1992). Tanàna ao amin'ny faritr'o	
56 0	570	<u>S11 tobs</u>	m, dark grey, mesive with coarse orystals of quartz and short disseminated through the silt matrix.
570	590	Silteto	m, as above.
5500	590	The second of th	no and shale, variegated to dark red color, india, misacous, bentonitie, few grains ery fine, white send.
590	600	20	ne, white, peorly comented, angular to sub-
•	e de la companya de		eig. Sand is arkees. erger pick for of SHIMARIMP FORMATION AT ESS 75.
600	610		ne, as above with increase of grain size.
61 ,0 ,	620	Red son	closerate pebbles, shale, angular with a fe thert fragments with sandstone matrix as above.
620	650	and the second of the second o	erate, buff to yellow color, arkone composi on, granule grain size, sub-round to angala trix. Sandstone, buff, poorly assested.
650	640	Congles 84	prate, as above with increased mount of mistons, arkesis, gray to buff.

op 44464

TOP	BOTTOM	HEC'Y	FORMATION
6401	650 •		Conglowerste and samistone as above with small
650	660		Conglomerate and sandatome, as above. (Poor sample)
660	670		Conglomerate and sandatone, as above.
67 0	680		Siltstone, dark red, massive, TOP OF MORNKOPIE FORMATION at 674 It.
68 0	690	e de la companya de l	Siltstone, as above with a treaks of sandstone, white poorly ecasated, porous, quartistie.
690	700		Siltstone, as above without sand streets.
700	710	a proposal proposal proposal proposal proposal proposal proposal proposal proposal proposal proposal proposal Proposal proposal pr Proposal proposal pr	Siltutore, dark red, as a bove with angular grains of buff, white, relies arkess sand.
710	720		all tales, as above.
720	750		Siltstone, dark red to margon, massive with streaks of shale, red, fissile.
730	740	e e e e e e e e e e e e e e e e e e e	Siltature, as above.
740	750		Siltstone, sa above.
750	760		Siltstone, and above with shale, brick red and sand, waite, medium grained with comeat of reddish material.
760	770	tivasti i tek ti te fet ventj	Shale and alltstone, brick red to marcon, micaccous.
770	780	4.	Shele and siltetone, as above.
780	785		Biltatone, as above with high content of nice.
785	790	•	Biltstone, as above, nicaccous, some shale.
790	795		Circulation sample at 795' alltatone, dull red with some fine to very fine grains of white arkose send.
795	800	en anne en regardade de la composición de la composición de la composición de la composición de la composición	No sample - sement contamination - survey at 795 -
800	810	·	Siltateme, as above.
810	815		Siltatone, es abou.

OP44404

TOP	BOTTOM	REC'Y	FORMATION
	•	-,.	CORE #1 815'-855' Rec. 20'
815	835	801	Siltstone, mottled red and green, well indurated angular grains, well sorted, massive with white nodules of medium grained sand.
835	865		Siltatone, mottled red and green. In the red material mice is present in minor amounts with sand, white, fine grained.
•			CORE #2 865'-885' Res. 20'
865	885	20' (Top 11')	Siltatore, mottled red and green. Silt size to a few very fine grains of sub-angular to sub- round shape. Well indurated, well sorted. Predominate mineral Quartz, massive, tight.
	_	(Next 4*)	Siltstone, red, other characteristics the same as above
		(Bottom 51)	The some as top 11 foot.
885	890		Silistone, mottled red and green.
890	900		Siltstone, as above with gypsum in small amount.
900	910		Siltstone, as above and sand, brown, medium to fine
910	920		Send, brownish grey, medium to fine, porous, fair induration, artises composition.
980	950		Drilling break indicated gand, as above, stopped at 984'. Then miltstone, brom-red with mica and come Merable gypone.
950	950	•	Siltatome, with gypsum, as above.
950	960		Siltatone, as above.
960	970		Siltatone, as above.
129	980		Sand, grey, fine to medium grained, angular to sub- round with siltatone, as above.
980	990	•	Siltatone, red, messive with shale partings and gypoum.
1000	1010		Siltatone, red to dark marcon. Red crystals of Quetz are present in the silt matrix with gypsum and small amount of bentonite.

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TOP	BOTTOM	REC. Y	FORMATION
1010	1020		Siltstone, as above with shale, red, fissile.
1020	1030		Silt stone and shale, as above, with sand, white, medium grained, mis accous.
1080	1040	•	Siltatose, shale, and sand, as above.
	1050		Siltstone, dark marcon, micaccous. Little gypsum.
1050	1060		Siltstone, as above with large quantities of gypsum. (The silt is calcareous.)
1060	1080	••• 	filtstone, as above.
1080	1090	en en en en en en en en en en en en en e	Siltatone emi shele, red, gypeum present. Survey a t 1007 bole verticel.
1090	1100		Siltstone and shale, as above with gand, brown-red, fine to medium, sub-engular grains, micassons, salesrooms,
			Circulation sample at IM feet. Sent, bromish-red, fine to medium, sub-angular grains, micassous, calearsous.
1100	1180		Seed, as above,
1120	1125		Sand, as above with appearance of limestone in large smounts, little whalk chalk. Drilling time per foot slowed dom. (Top of MAIRAB at 1124.)
			Girgulation Sample at 1127 feet. Sand, white, medium to a few searce grains, massive, well impressed, angular to min-engular, well serted. Quartz predominate minoral. Fair perceity, fair I- Top of COCONINO at 1127 feet.
			Core #3 1127-1147' Bec. 7'.
1127	1140	0*	Kissei.
1140	1147	9 *	Sand, white, with slight brown stain, fine to medium grained, hard, sub-angular to rounded, well-ecrted, quartz composition, eross bedded, tight. He show gas or oil.

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			Page 7
TOP	BOTTOM	REC'Y	FORMATICM
			CORE #4 1151-1168' Rec. 5'
****** *		The second of th	Sant, shale with slight brown stein, hard, rounded, well sorted, quartz predominate with mice in sme flakes, bedding messive, fair porosity & K. (Mad invaded core) no fessils.
1793	esteb		Drilling sheed for 100 feet or to a drilling break from hard said - them core.
1168	1.800		Sand, white, with slight brown stain due to presence of flesh color quartz grains.
1200	1230		Sand, as above.
1830	1860		Sand, as above, with stringer or lenses of sand, flesh seler, with same lithic characters as above. Survey at 1860 feet 50 minutes (0°50').
1260	1270		Sand, as above with increase in sand, flesh to red color, fine to few medium, sub-angular grains- color due to red quartz erystals, silica coment and small amount iron oxide.
1270	1280		Sand, white and flesh red, as above.
1880	1290		Sand, as above.
1890	1500	er og verke og ende	Sand, flesh red, fine to medium grained with send, white.
	en en en en en en en en en en en en en e		Circulation cample at 1800 feet. Sand, flesh red with minor amount sand, white, as above.
		and a second the second	CORE #6 1500-1520' Rec. 12'
1500	1805		Loss circulation while coring at 1500'. Sext, reddish to flosh brown, fine to medium, hard, meb-angular to sub-round, well sorted quartz, eross-bedded, fair peresity and K. All quartz grains are white.
1.505	1512		Missing.
1512	1814		Sand, brick red, fine to medium grained, well sorted, quarts, bedding indistinct, fair perceity & K, quarts grains are red - translucent, iron oxide coment.
1315	1816	· · · · · · · · · · · · · · · · · · ·	Sand, as above, with leases of brownish-white send, bedding distinct, flat.

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		e e e e e e e e e e e e e e e e e e e		CORR #5 (continued)
1 5 20	1519		Send. Missin	es described 1500'-1305'. B.
1320	1350		Sand,	as above.
1350	1355		ر الموساد المارية المارية	cont #6 1250'-1270' Rec. 9' brick red, fine to medium, well indurated, rounded to sub-rounded with few sub-angular grains.
	gradije i sedena	e e e e e e e e e e e e e e e e e e e	- 1.0 - 1.1 - 1.12 m	quartrite and Limonite predominate with some biotite. Bedding indistinct. Good perceity and L. No fossile, appears to be Met.
1,953	1.565			as above with stringers of sand, with paler red celer, elso black earbon spots. (Do not give resotion with Carbon-Tet). Spots are found only in two inch wors.
356			Seed.	as above with red siltetone partings.
357	1509		Sani,	light brick red, other characters as of 1550-15
1359	1570		Missin	
1370	1420		Sand,	as above, in last core.
· ·			sur etc	CORE #7 1420'-1440' Res. 17'
1420	1457	14*		barron, brick red to flash red, well injurated, rounded to sub-rounded mith a few sub-angular grains, well serted, quarts predominate mineral bedding indistinct, good peresity and K, silt-stone partings. (No show gas or oil.)
1437	1440	0.	Missin	
1440	1500			ta abore.
1500	1505	er of a like a comparison of a second		as above.
1505	1510	•		es above, with shale, purple, fissile partings.
1517		en en en en en en en en en en en en en e	Circul	ation sample. brick red to flash red. Good poresity and K.
1510	1520			abore.
1520	1525		Sand.	Tar. This is sand as described above with her y Asphaltic material. Distribution spetty Cate with parbon tetrachloride.

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TOP	BOTTOM	REC Y	FORMATION
1.530			Circulation sample. Sand, as above - He evidence of Tax.
			CORE 48 1550'-1550' Res. 5'.
1530	1550	51	Sand, brick red to lighter red, fine to medium, well imbreted, well served with siltstone partings. Sent is berren. Good porosity and K. A show of gas bubbles appeared for a few minutes in the mud.
•	. •	.,	CORE #9 1860-1870' Rec. 17'.
1550	1563	15'	Sand, well indurated, fine to medium, well sorted, frosted quarts with feldsper and mice in small amounts. Bedding indistinct. Good poresity & K, miltstone partings, - He show,
1564			Sand, as above, with brick red color.
1565	1567	8*	Sand, as top 15'. No show.
1548	1570	0.	Minsing
1570	1500		Sand, light red, fine to medium with quartz granules white, fronted.
1505	1505		Sand and quarts, as above, with small amount of calcarsons shale.
		y K	TOP SUPAT 18901
1595	1600		Quarts grazzles as above with <u>shele</u> , red, fissile,
1800	1425		Semples indicate decrease in amount of quarts and definite processes of shale, red, fissile, liney. Coring ahead to determine if not in the top of the Supai.
			COPE \$10 1625-1655' Ree, 10"
1623	1658		Sand, rod, fine to medium, hart, querge predominate mineral, good percet by and E. No show gas or oil. He teste or oder. Missing. Lost Sirculation et 1637' and again at 1655'.
		e d	Survey at 1626* 1°.
1458 6 P 4	1560		Due to lost singulation problem no returns were obtained that can be placed in the log. A for returns indicate: Sandstone, red with granules of quartz and a predeminance of red, silty, missessus shale.

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TOP	BOTTOM	HEC. A	FORMATION
			CORE #11 1660°-1670' Rec. 10" "Wire Line - Mereury"
	Top	6*	Cement Sandstone, red, fine to medium, hard, angular to mb-angular, well serted, quarts -
			bedding indistinct. Good porosity and K. No show, with spets of pure white sandstone with similar lithic character
•	,		CORE #12 1870'-1879' Rec. 6'
1670	1676	6.	Sandstone, dark red, fine to medium, fair indura- tion, poorly serted, quarts and iron exide predominate. Percelty poor with spots of white sandstone, as above.
1676	1879	0'	Missing. Ro shor gas - oil.
1679	1689		Ho ample.
589	1700		Senistone, shaley, dark red with white spots of
1700	1710		Red shaley sandstone, as above.
1710	1750		Soles Shale and sanistone, as above.
1780	1740		Red shale and sandators, as when above, with green shale nothing.
1740	1769	godovský godovsky Romania Romania	Shale, red, fissile with few floating sand grains and mice.
1760	1480	land and the second	Shale, red, as abeve.
1780	1800	er galter	Shale, red, fissile, as above.
1800	1870		Shale, red with green shale partings.
1812	1820	· · · · · · · · · · · · · · · · · · ·	Red am green shale, as above.
1820	1,850	e de la	Shale, red, fissile, with some silt grains.
1880	1940		Shale, red, as above.
840	1.860	•	Shale, red, fissile, with shale, green and gypsum
1850	1865		Shale, as above, with gypsum.

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OP B	OTTOM	PEC.A	FORMATION
•	•		OORE \$15 1863-1863 Res. 20*
1865	1993	80*	Shale, red and green motiled, with red color
	,		presentate, silt to a few very fine grains, hard, well serted, misassous,
			fissile. Tight, veins of gypan up to
1.865	1900	er of god bar of a	Shale, red and green with gypaum, as above.
1900	1910	· · · · · · · · · · · · · · · · · · ·	Shale, as above.
1910	1920		No sample.
920	1940	eran er er er er er er er er er er er er er	Shale, red with gypsum and green shale, as above.
1940	1950	• .	Sinks, green, fissile with some fine manistone, red.
1950	1900	e para menengan pangan angkanan pangan salah salah salah salah salah salah salah salah salah salah salah salah Salah salah sa Salah salah s	Sends tone, red with green and red shale and silt-
1960	1980		Sani stone, as above.
1980	2000		Sanistone, with shale and siltatone, as above.
2000	2010		Sand stone, with shale and siltatone, as above, and white mand stance medium grained, silica coment.
2010	2050	And the second	Sand stone, as above.
1030	2050		Semistone, with shale and siltstone, as above, white, medium sands tome.
			CORE \$14 2050-2070* Rec. 20*
050	2050	70.	Samistane, red, very fine to fine, seft, well serted
			quarts and nice with large enount Limonite concert. Bedding imisting twith partings of red clay. Poor porosity, no K.
2060	2070	10*	Sanistone, as above with partings of sanistone,
-		en en en en en en en en en en en en en e	grey-green, hard, Quarts, tight, - Samistane contains galt. Entire Core barren.
2070	2115		No Semples taken.
2115	2125		Sendstone, as above, with green and red shale, fissile. Silt particles and elsy, red, iron oxide matrix. (equented).
2125	2135		Shale, Grey-green, fissile with clay and silt, red.

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TOP	BOTTOM	REC'Y	FORMATION
21.55	2145		Shale, gray-green, fissile, calcamonus, with corress in clay and silt.
2145	2155		Shale, grey-green, fissile, slightly colcaroous.
21 55	2760		Shale, grey-green, fissile, slightly ealeareous, with silt to very fine particles floating.
2150	2170		Shale, as above with sandstone, very fine to medium, highly culsarsous.
2170	2180		Shale, with sandstone, valearcous, as above.
2180	2190		Shale, grey-green, fissile with sandstone, grey, fine to medium, highly calcareous.
2190	2800	:	Shale, with sandstone, as above.
2200	2210		Ebale, grey-green, fissile, small amount sandstone and siltstone, alightly micaecous.
2210	2250	r e	Shale and siltstone, as above with presence of red siltstone.
2 250	2250		Siltatone, red, massive, with small amount shale, grey-green, finalle.
2250	2 26 0	**************************************	Siltstone, grey-green with some red and shale, grey-green, finalle.
2 260	2270		Siltatore, as above, with sandstone, green, medium grains, glauconitie.
227	2290	e e e e e e e e e e e e e e e e e e e	Biltatoms, as abave, with shale.
229	0 2300		Siltstone, as above with shale,
250	0 2320	en en en en en en en en en en en en en e	Siltstone, as above, some shale.
232	0 2550		Siltatone, with shale, as above.
253	2540		Siltatone, gray-green, with some red and green stale, eslecteous.
254	0 2550	. · · · · · · · ·	Siltstone and shale, as above.
235	0 2540		Siltatone and chale, as above.
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TOP	BOTTOM	REC'Y	FORMATION
2360	2370		Siltatone and shale, as above.
2570	2880	and with the second of	Siltatome and shale, as above, shale has salty teste
2580	2 590		Siltatore, as above, with salty taste with fragments of black siltatore.
2390	2400		Siltatone, as above.
2400	2410	· · · · · · · · · · · · · · · · · · ·	Siltatome, as above, grey-green and black with minor amount red shaley siltatome.
241,2	2420		Siltstone and gamestone, grey-green and red massive with minor amount red shale partings.
2420	8450	i de la compania del compania del compania de la compania del compania del compania de la compania de la compania de la compania de la compania de la compania del compania	Siltatone, red, musive, with green siltatone with sandstone, red, very fine to fine.
2450	2440	,	Siltatone with sandstone, as above with more green.
2440	2450	e de la companya de la companya de la companya de la companya de la companya de la companya de la companya de l La companya de la iltetone with gardstone, as above (Mud contains sand grains that are not Coconino and may be bedded within the siltetone.)	
2450	2460	e s Julius seguina	Siltatone, as above with the above sand very fine
2460	2470		Siltatone, as abéve and sandatone.
2470	2490	ا منابع سخان المادي الأوراث المادي	Siltatone, grey-green with floating grants of quarts, granule size with minor amount of red shale and miltatone and sandatone.
2480	2490		Siltatone and samistone, gray-grame, as above.
2490	2500		Siltatone, red and gray-green as above.
2500	2529		Silt stone and samistone, red with green mottling.
252(2580	• • • • • • • •	Silt stone and sandstone, as a bove.
			Unable to determine missing section.
			Sanistone, red, very fine to a few fine grains. Fair induration, well sorted, quartz mica, emiliamite predominate, bedding indistinct, poor poresity and K with partiage of silty misaesom shale and green spots of salt. (No show.)

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TOP	BOTTOM	REC'Y		FORMATION
2550	2560		Sandatone,	red, very fine to fine with siltatone and shale partings. Few spets of salt.
2 560 .	2570		Sand stone.	with siltstone, shale and salt, as above.
e570	2590		Sand a tone,	with siltstone, shale and salt, as above.
2 590	2600		Sands tone.	with siltatone, as above and sandstone, pure white. (Small spots within the red.
2600	2610	in the second of	Sand a tone,	with siltstone, as above.
2610	2620		Siltetone,	red to gray-green with sandstone.
2620	2650		Santa tora,	red, very fine to fine, with siltatone and shalo, red.
2650	2640	· •	Lost dirou	lation. Returns no good.
2440	2650	a saya sa sa kababa saya sa	Sand stone,	red, very fine to fine with siltatone, red, massive and shale, red, fiscile, with a few spets of green color salt.
2650	2640	n () in the management and an incident	San stone	rith silvatone and shale, as above.
2 64 0	2670	er en en en en en en en en en en en en en	Send stone.	as above with shale, dark gray, fissile, hard.
2670	2680	en en en en en en en en en en en en en e	Sand a tone	and siltstone, more with some shale.
2 68 0	2690		Sand stone,	red, very fine to fine.
2690	8700		Sari store.	red, as above, with sendy shale, dark go; fisalls, with floating quartz grains. (Drilled about 5 times as hard as material above 25006.)
	-		COE	\$14 2700'-2717' Bee. 2'
2700	2707 (Tep	7 † 5 *)		red, very fire to fire, hard, angular to sub-angular grains, well serted, Quartz with mice secont by Silica and Limonite bedding indistinct, parosity poor with siltations partings and apots of green salt.
(3	Bottom	4*)	Top 6" - g	and stone, white, very fine, very hard, angular to sub-angular, quartz with Nica (Bictite) - Silica cement. No bedding - No porceity or K.

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Next 2 feet - Samistone, red, very fine to fine wis salisatione as in top 3' of serve. Next 4" Samistone, crey-green, very fine to fine wis samistone, crey-green, very fine to fine, very hard, anginar to sub-engular. Quarts Silies essent. Crownedled, no porceity or K. Mottling of colors. Bottom Foot Samistone, red, as above, with willistone, calt. 2707 2717 Wiseing. (Entire Core Barren) 2780 2780 Samistone: red, very fine to fine, hard with siliestone and green spots. Fragments of hard, gray-green and white samistone, as above. 2750 2740 Samistone, as above. 2750 2740 Samistone, as above. 2750 2760 Samistone, red, hard with red milistone and a few fragments of hard, finells, black shale and bard silies onest white-grey samistone. 2750 2760 Samistone, red, massive, hard, with fragments of the samistone and a few white-grey samistone. 2760 2770 Samistone, red with shale and white samistone. 2770 2780 Samistone, red as above. 2780 2780 Samistone, red as above. 2780 2780 Samistone, samistone, red, massive, hard with fragments of white samistone. 2810 2820 Silistone, with samistone, hard with fragments of white samistone. 2820 2830 Poor Sample - appears to be milistone, as above. 2820 2830 Silistone, sandy, red, massive, saidy massive as above. 2820 2830 Silistone, sandy, red, massive, saidy massive as above.	TOP	BOTTOM	REC'Y		FORMATION
Next 4" Samistone, gray-green, very fine to fine, very hard, angular to sub- angular. Quarts Silies sement. Orn bedded, no porosity or K. Mottling of colors. Bottom Foot Samistone, red, as above, with silistone, salt. 2707 2717 Missing. (Ratire Cere Barren) 2720 2730 Samistone; red, very fine to fine; hard with silt- stone and green spots. Fragmants of hard, gray-green and white samistone, as above. 2730 2740 Samistone, as above. 2740 2750 Samistone, as above. 2750 2740 Samistone, as above. 2750 2760 Samistone, as above. 2750 2760 Samistone, as above. 2760 2770 Siltstone, samiy, red, massive, hard, with fragman of black shale and hard silica commit silte-grey samistone. 2770 2780 Samdy siltstone, red at the shale and white sami- atome, as above. 2780 2790 Samdy siltstone, red, massive with shale. 2780 2800 Siltstone, samdy red, massive with shale. 2810 2820 Siltstone, samdy, dark red, massive, hard with fragmants of white samdstone. 2820 2830 Poor Sample - appears to be siltstone, as above. 2830 2840 Siltstone, sandy, red, massive, slightly misseest	-	 			CORE #16 (continued)
Next 6" Sandatone, grey-green, very fine to file, very lard, engular to sub- angular. Quartz Silies sement. Ord bedded, no porosity or K. Motiling of colors. Bottom Foot Sandatone, red, as above, with silistone, ealt. 2707 2717 Missing. (Instite Cere Barren) 2780 2780 Sandatone; red, very fine to fine, hard with silitatone and grey-green and white sandatone, as above. 2750 2740 Sandatone, as above. 2750 2740 Sandatone, as above. 2750 2760 Sandatone, as above. 2750 2770 Silistone, sandy, red, massive, hard, with fragments of hard, firstle, black shale white-grey sondatone. 2750 2770 Silistone, sandy, red with shale and white sand- atome, as above. 2750 2780 Sandy silistone, red with shale and white sand- atome, as above. 2760 2770 Sandy silistone, red with shale and white sand- atome, as above. 2760 2780 Sandy silistone, red with shale. 2760 2780 Sandy silistone, sandy dark red, massive, hard with fragments of white sandatone. 2760 2810 Silistone, sandy, dark red, massive, hard with fragments of white sandatone. 2810 2820 Silistone, sandy, dark red, massive, hard, fee green spets. (Do set have saily taste here.) 2820 2830 Poor Sample - appears to be silistone, as above.				Next 2 feet	" Bondstone, red, very fine to fine with
Bottom Foot Sendstone, red, as above, with filtstone, selt. 2707 2717 (Esting Core Barren) 2720 2730 Sendstone; red, very fine to fine, hard with siltstone and green spots. Fragments of hard, grey-green and white sandstone, as above. 2730 2740 Sandstone, as above. 2740 2750 Sandstone, as above. 2750 2740 Sandstone, as above. 2750 2750 Sandstone, red, hard with red siltstone and a few fragments of hard, fissile, black shale fragments of hard, rissile, black shale and hard silten comment white-grey sandstone. 2760 2770 Siltstone, sandy, red, massive, hard, with fragments of black shale and hard silten comment white-grey sandstone. 2760 2760 Sandy siltstone, red with shale and white sand-atone, as above. 2780 2790 Sandy siltstone, sandy red, massive with shale. 2780 2790 Sando Siltstone, sandy dark red, massive, hard with fragments of white sandstone. 2810 2820 Sando Siltstone, as shown, red, massive, hard, few green spets. (No met have sally taste here.) 2820 2830 Poor Sample - appears to be siltstone, as above.				Next 6"	Sandstone, gray-green, very fine to fine, very hard, angular to sub-
### ### ##############################				ing the second section of the second	bedded, no porosity or K. Mottling
(Entire Gare Rarran) 2780 2780 Sandstone, red, very fine to fine, hard with silt- stone and green spots. Fragments of hard, grey-green and white sandstone, as above. 2780 2740 Sandstone, as above. 2780 2780 Sandstone, as above. 2780 2780 Sandstone, as above. 2780 2770 Sandstone, wandy, red, massive, hard, with fragments of hard, finalis, black shale 2780 2770 Siltstone, mandy, red, massive, hard, with fragments of black shale and hard silica commit white-grey mandstone. 2780 2780 Sandy siltstone, red with shale and white sand- atone, as above. 2780 2780 Sandy siltstone, red as above. 2780 2780 Siltstone, sandy red, massive with shale. 2880 2810 Siltstone, with smalstone, hard with fragments of white sandstone. 2810 2820 Siltstone, with smalstone, red, massive, hard, few green spots. (Do not have salty taste here.) 2820 2830 Poor Sample - appears to be siltstone, as above.			en en en en en en en en en en en en en e	Bostom Foot	
stone and green spots. Fragments of hard, grey-green and white sandstone, as above. 2750 2740 Sandstone, as above. 2750 2750 Sandstone, as above. 2750 2750 Sandstone, as above. 2750 2750 Sandstone, red, hard with red siltstone and a few fragments of hard, fissile, black shale and bard, hist fragments of hard, rissile, black shale and bard silten occurs white-grey sandstone. 2750 2750 Sandy siltstone, red with shale and white sandstone, as a bove. 2750 2750 Sandy siltstone, red as above. 2750 2750 Sandy siltstone, red as above. 2750 2750 Sandy siltstone, sandy red, massive with shale. 2750 2850 Siltstone, sandy dark red, massive, hard, few green spots, (Do not have salty taste here.) 2820 2830 Poor Sample - appears to be siltstone, as above. 2850 2840 Siltstone, sandy, red, massive, slightly missees	2707	2717	estro en la		or Berrun) – de recente de la company de la
hard, gray-green and white sandstone, as above. 2750 2740 Sandstone, as above. 2750 2750 Sandstone, as above. 2750 2750 Sandstone, as above. 2750 2750 Sandstone, red, hard with red siltstone and a few fragasets of hard, fissile, black shale af black shale and hard silton commit white-grey sandstone. 2770 2780 Sandy siltstone, red with shale and white sandstone, as a bove. 2780 2790 Sandy siltstone, red with shale and white sandstone, as a bove. 2790 2800 Sandy siltstone, red as above. 2790 2800 Siltstone, sandy dark red, massive hard with fragments of white sandstone. 2810 2820 Siltstone, with sandstone, red, massive, hard, few green spots. (Do mot have salky taste here.) 2820 2830 Poor Sample - appears to be siltstone, as above. 2850 2840 Siltstone, sandy, red, massive, slightly missacene.	2780	2750		Sanda bone,	red, very fine to fine, hard with silt-
2740 2750 2880 2760 2880 2760 2880 2760 2880 2770 2880 2770 28112 tone, sandy, red, massive, hard, with fragments of black shale and hard silica occupations. 2770 2780 2880 2790 2880 2880 28112 tone, sandy red, massive with shale. 2810 2820 2810 2820 2830 2820 2840 2820 2840 2830 2840 2830 2840 2840 2840 2840 2840 2850 2840 2850 2840 2850 2840 2850 2840 2850 2840 2850 2840 2850 2840 2850 2850		اد ما السواحد الدار المار	and the second s	n ang tambang giringgan kilonot	hard, grey-green and white sandstone,
2750 2750 Sandstone, red, hard with red siltstone and a few fragments of hard, fissile, black shale 2760 2770 Siltstone, sandy, red, massive, hard, with fragments of black shale and hard silted occupit white-grey sandstone. 2770 2780 Sandy siltstone, red with shale and white sand-atome, as a bove. 2780 2790 Sandy siltstone, red as above. 2780 2790 Sandy siltstone, red as above. 2780 2790 Sandy siltstone, sandy red, massive with shale. 2880 2810 Siltstone, sandy, dark red, massive, hard with fragments of white sandstone. 2810 2820 Sandy Sandy red, massive, hard, few green spets. (Do not have sally taste here.) 2820 2830 Foor Sample - appears to be siltstone, as above.	2750	2740		Sand stone	as above.
Pregnents of herd, fissile, black shale 2760 2770 Siltstone, sendy, red, massive, hard, with fragment of black shale and hard silice commute white-grey mandatone. 2770 2780 Sandy siltstone, red with shale and white sand-atome, as a bove. 2780 2790 Sandy siltstone, red as a bove. 2780 2790 Sandy siltstone, red, massive with shale. 2800 2810 Siltstone, sandy, dark red, massive, hard with fragments of white sand stone. 2810 2820 Siltstone, with sand stone, red, massive, hard, few green spots, (Do not have sally taste here.) 2820 2830 Poor Sample - appears to be siltstone, as above. 2830 2840 Siltstone, sandy, red, massive, slightly misseem	2740	2750		Santatone,	us a beve.
2770 2780 3andy siltstone, red with shale and white sand- stone, as a bave. 2780 8790 Sandy siltstone, red as above. 2780 8800 Siltstone, sandy red, massive with shale. 2800 8810 Siltstone, sandy, dark red, massive, hard with frequents of white sandstone. 2810 2820 Siltstone, with sandstone, red, massive, hard, few green spots. (Do not have salty taste here.) 2820 2830 Poor Sample - appears to be siltstone, as above. 2830 2840 Siltstone, sandy, red, massive, slightly missesses.	2750	2740	<u>.</u>	Sant a tone,	red, hard with red siltatone and a few regards of hard, fissile, black shale.
Sendy silistone, red as above. 8790 8800 Silistone, sandy red, massive with shale. 8800 8810 Silistone, sandy, dark red, massive, hard with framents of white sandstone. 8810 8880 Silistone, with sandstone, red, massive, hard, fee green spets. (Do not have salty taste here.) 8820 8830 Poor Sample - appears to be silistone, as above. 8830 8840 Silistone, eardy, red, massive, slightly missees	2760	2770		Siltstone,	of black shale and hard silica commt
2790 2800 Siltstone, sandy red, massive with shale. Siltstone, sandy, dark red, massive, hard with frameworks of white sandstone. 2810 2820 Siltstone, with sandstone, red, massive, hard, fee green spots. (Do not have salty taste here.) 2820 2830 Poor Sample - appears to be siltstone, as above. Siltstone, eardy, red, massive, slightly missesses.	2770	2780			stone, as a bove.
2800 2810 Siltstone, sandy, dark red, massive, hard with framents of white sandstone. 2810 2820 Siltstone, with sandstone, red, massive, hard, fee green spots. (Do not have salty taste here.) 2820 2830 Poor Sample - appears to be siltstone, as above. 2830 2840 Siltstone, sandy, red, massive, slightly missesses	2780	2790	محمد المحاجمة المحاجمة المحاجمة المحاجمة المحاجمة المحاجمة المحاجمة المحاجمة المحاجمة المحاجمة المحاجمة المحاج	Sendy allte	tone, red as above.
2810 2820 Silistone, with semistone, red, massive, hard, few green spots. (Do not have salty taste here.) 2820 2830 Poor Sample - appears to be silistone, as above. 2830 2840 Silistone, sandy, red, massive, slightly missesses	2790	8800		Siltstone,	eardy red, massive with shale.
fee green spots. (Do not have salty taste here.) 2820 2830 Poor Sample - appears to be siltstone, as above. 2830 2840 Siltstone, sandy, red, massive, slightly missesses	2800	2810	. , e casa da Seco	Siltstone,	sendy, derk red, massive, hard with frequents of white sandstone.
2850 2840 Silistone, sandy, red, massive, slightly missesses	2810	2980	and a second control of the second control of the second control of the second control of the second control o		fee green spets. (Do not have salty taste here.)
2850 2840 Silistone, sandy, red, massive, slightly missesses smell amount of gypsum.	2820	2850	·	Poor Saupl	e - appears to be siltatone, as above.
	2850	2840		Silts tone,	sandy, rad, massive, slightly misassous small amount of gypaum.

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TOP	BOTTOM	BEC 'Y	FORMATION
2840	2850		Siltstone, red as above with fragments of green, shaley siltstone.
28 50	2860		Siltatone, red, as above.
2960	2870		Siltstone, red, massive, with sendstone, red and shale, red, fissile.
2970	2860		Siltstone, red with mottling of green.
2880	2890		No Sample.
2890	2998	* Service Services	Siltstom, as above.
			CORE \$17 2898-2918 Rec. 20
2698	2902	And the second of the second o	Sanistone, dark red, very fine to fine with a few medium grains of mice, hard, angular to sub-angular, well serted, indistinct bedding, manive, peer perceity, no apparent K.
2902	2905	1.	Conglowerate, dark gray, granule size with medium grains, sandy matrix. Predominate minerals quarts, faldsper, with
			gypmused calcite veins and fragments of wheen is material.
2905	2911	8° 	Samiatons, as described 2898'-2908' with floating granules of Dolemitie-Siliceons material, and shale, red, fissile.
2912	2015	7.	Sandstone and shale, as above with slickensides.
2913	2917		Sendations, as above, highly fractured, with float- ing grains of granule size particles. Particles are Delouitie with silicous centers and gypsum value.
2917	2918	1.	Smidstone, as above, softer and mith shale.
			(Ballre core barren.)
2919	2980	•	DARK red shaley siltatone with fragments of sandstone, white, fine. Siltatone contains siliacons delemitic publics. Some gypage, calcaracus, matrix.
2950	2940	e e e e e e e e e e e e e e e e e e e	Shale, siltstone, with white condstone, as above.
2940	2950		Shale, siltstone, with sandstone and gypsum, as above.
2950	2960		Siltatene, dark red, shaley with siliceous dolomitic pebbles - some gypsum.

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TOP	BOTTOM	EEC'Y_		PORMATION
2960	2970		Siltstone,	dark red, as above.
2970	2960		Siltstone,	dark red, as above.
2980	29 90		No Semple.	
2990	3000		Siltstone,	as above, having a dark blue cast, micaceous.
8000	5010		Siltstone,	as above.
2010	5020		Siltatone,	dark red, massive with shale, red, fissile,
5020	\$080		Siltatone.	as above with a few fragments of liney material, green, hard.
5050	2046		No Samples	
		ing a second second second	CORL	#18 3045'-3049' Rec. 2'
To	D 17.		Siltstons,	chaley, red, bard, with small veins of
Bette	B 6*		Limestone,	green-grey, hard, Amerphous, bedding indistinct, poor perceity with mottling of siltstone, red. (Two cones lost in bole.)
5050	5060	to the term of the second second	Siltstone,	red with shale em green limestone.
3060	3070	erikan dia periodokan dia periodokan dia periodokan dia periodokan dia periodokan dia periodokan dia periodoka Periodokan dia periodokan dia	Siltators.	dark red, massive with green limestone and red the le.
3070	5080	paggine sang≨erg per basa Sangan pagginen kabangan	Siltstone	dank red, slightly missecous with some
5 0 80	5090		Siltstone	as above.
509	3100		No Sampla	
\$100	51.10	en june en troene en en et effe Troene	Siltstone	dark red, slightly micassous with some
311 0	3).80	ا المشارع الماري الماري الماري الماري الماري الماري الماري الماري الماري الماري الماري الماري الماري الماري ال الماري الماري	Siltatone	derk red, hard, with green linestone and red shale, fissile.
5120	3130		Siltstone	, as abov a.
3130	31.40	-	Siltstons	, as above.
3140	3150		Siltatone	as above with fragments of guen linestone and shale partings.

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•	_	and the second of the second of	rage w
TOP	BOTTOM	BEC'Y.	FORMATION
3150	3160	e de la composition de la composition de la composition de la composition de la composition de la composition La composition de la br>La composition de la composition della composition della composition della composition della composition de la composition de la composition de la composition della comp	Silistone, as above.
5160	27.40		Siltstone, red, shaley.
5170	31.80		Silt stone, shaley, red, bard.
5180	2790		Biltstone, as above.
			GORE #19 5198'-5196' Gut.4' Rec. 4'
	8194 5196		Semistons, red, very fine to fine, hard with silt stone, and shale, red, pertings. Spots of green limestone.
CYPE	8470	.	Santaions, as above, with fleating grains of granule black quarts, aliokensides.
3 1.96	5210		Ne Samples.
\$210	3220	ار موت اپار زورد دادور کلاد	Semistone, light grey, medium to course, cal- careeus, with pyrite crystals.
3220	3230		Sandstone, as above, with siltstone, red.
5250	3240	en en en en en en en en en en en en en e	Silvatore, red, hard, with fragments of light gray sandature, medium to encree.
5840	5250		Siltstone, ret, bard, with shale partiage and a few spets of gypeus.
3250	3260	en en en en en en en en en en en en en e	Siltatone, red as above with gypanm and Dolamite.
3260	3870	en de la companya de la companya de la companya de la companya de la companya de la companya de la companya de La companya de la co	Siltatone, red, bard, with gypsum and Dolomite.
3270	526 0	ing and a subsection of the second	Silistone, as above, with gypour. No Dolonite.
520 0	529 0		Silkatuan, as above, with increased mount of gypou
3890	3292	en en en en en en en en en en en en en e	Siltstone, as above, with small amount of gypana.
. 44			DORE \$20 3892-5294' Oct 2' Noc. 6"
			Sanistons, red, very fine to fine, hard, well sorted more mice flakes, bedding indictinat, peop perceity, apparently little K. Vag limed with white crystalline Calcite and green mettling of limestone. Red send-stone is slightly calcareous. Entire core barren.
3295	5500	•	Sanistone, red, very fine to fine, hard, with

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TOP	BOTTOM	REG'T	FORMATION
380 0	5860		Sendatone, red, very fine, hard, as above, with siltatons partings and calcute.
3 35 0	5585		Samistone, as above, with fragments of non-weathered granitie on terial. TOP GRANDER \$355.
53 55	5860		Biotite Granite
\$560	5375		Biotite Granite, as above.
			00RE #81 5575'=5577' Cut 2' Rec. 0' CORE #22 5577'-5378' Cut 1' Rec. 1'
1	÷		Plus the IV out in Core 481
			Rictite Granite Essential Miserals: 1. Quarts - pink and white,
	•		Characterizing Assessory Minerale: L. Blotte - black, platy.
			Minor Accounty Minorals: Secondary Minorals: Chlorite as alteration of Biotite
8378	3400		Biotite Granite
3400	8410		Biotite Granite
541.0	3480		Biotite Grant to
3480	3430	`,	Biotito Granite
			Drilling Break 3422'-5422' - Girenlation Sample indicates no change.
			CORT 485 5451'-3452' Qut 1'
			Recovered only small fragments. Outtors were lost in the hole.
			Coring time for the one foot was I hour and 45 min.
			Biotite Granite: Material was finer grained, but the same composition with minute veins of on Leite.

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General Petroleum - Creager State #14 - 6 (sec. 6, T. 19 E., E. 2) E.)

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General Petroleum - Creager State #14-6 -Cont.

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												Watrix
quarts and some linestone.		querts, limestone and claystone	quarts and some clayston	do.	some sandstone with quar	nontains quarts and	some white and gray claystone	contains quarts	contains gray claystom	centains white clayston and quarts		Comments

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some quarts; some medit	nome quarts and pale yellowish-green clays	900000000000000000000000000000000000000	Querts	SOSS QUANTES	August 68	large shount of quarts	Inte mount of quarts			Quares	gose purple-red clarators		

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General Petroloum - Creager State #14-6 - Cont.

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28 1-5 1-6 1-6 1-7	74		fine	Cros.	e e	50 1-2 0+	72 m	å.	•	very fine	eresze.
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	P			contains some bluish gray		?	contains some light bluish gray sandstone	contains also medium gray		some very pale green.	Comments

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General Petroleum - Oresger State #14.6 . Cont.

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.		fo.	Tine	जलते रिका	very fine	ña.	do.	do.	ži ne	very fine		fexture
				д <u>.</u>	H			Ĉ	ô.	Ão.	1.1me	Coment
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well sorted	contains grayish-red siltstone with lime		contains grayish-red		poorly sorted	© •	well sorted, friable	contains some grayish-red siltstone			contains white silestons	Comments

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	de.	2.	20.	6	a a	ë.	ដ	sanās to zie	claystone	do.	81] teta 10	ë.	sandstone	¥.20
	â.	å. •	de.	noderate orange pink	grayish	pale red (5R)	do.	grayish pink	ů.	ů.	grayish	grayish pink	grayish orange pink	Color
	do.		fine	tine sand	2120	ACT LINE	do.	n				very fine	. **	Tax bure
			1100				្វ ័		8	do.	₽ •	11480		Genent
														Watriz
	8	contains some gray	cleystone some gray	311 87.8	contains grayish-red claystons with line of		•	also grayish-red claystone	***	•	contains some gray	contains grayish-red siltetons	contains some mirture of	
0 I	04	grayish-red	graylab-red		on coment			Laystone			grayish-plak		mixture of	

General Petrolems - Creagor State #14-6 - Cost.

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eneral Patroleum - Grenger State #14-6 - Cont.

			((a tion
	1510	1500	1490	1480	1470	1460	1450	2 Livio	Okti	1420	1410	(feet)
								-	÷) Thickness
	D. 0	ជ ់		do.	40	₫ 0	do.		Q. Q.	\$	sauds to no	Magas o
pink (5A)	moderate	pink (10H)	pink (572)	đọ.	• •	moderate orange pink (108)	G. G. G. G. G. G. G. G. G. G. G. G. G. G	ůř.	moderate orange pink (572)	pink (10R)	poderate orange pink	Co. 102
	do.	•	a. •	do.	0	very fine	2100	very fine	α •	å.	rine.	Texture
oxide	iron	₫	₽	0.	do.	00	ស ១ •	11100				Comons
*	, 1											Matrix
gray siltatone	yellowish	vallevish-green siltsten		20.	3870 SA 1160		some graylab-red silestom	20.	contains some grayish-red claystons		some grayish-red sandstone and medium bluish gray claystone	Company

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General Petroleum - Cremger State #18-6 - Cont.

·			(~				·	(ation
1640	1630	1620	1610	1600	1590	1580	1570	1560	1550	1530	Depth (fest)
			ē	.*							Thickness
β. Θ •	sandstorie	siltstore	6	sauds to ne	do.	siltstone	01 G	4	ão •	sandato no	Marie
pink (10E)	moderate red	ಭ •	moderate orange mink (108)	pink (52)	24 0 *	pale red	poderate pink (102)	noderate orange pink (52)	<u>0</u>	mederate orange plak (102)	Color
very fine	fine saud+	æ	₫ .	100 mg		· ·	å.	***	80	very fine	Texture
•	iron			tron	đọ.	lims	do •	Q. •	0	iron	Cezent
			- (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)		·		. · ·				Matrix
eiltatone of 1580', quarts organals, weak census	well sorted & quarts		contains siltatene of 1580', white quarts, weak coment	contains siltstone of 1550°, quartz crystals	contains sandatone of 1570°	**** of 1570*	some reddish-gray siltaton quarts crystals, week cement	some reddish-gray siltate and some medium bluish gray siltatone with line	very well sorted quarts orystals, weak cement	nome reddish-gray ellt- stone, querts crystals, wask cesest	Comments

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General Petroleum - Creager State #14-6 - Cont.

Cement

Coarsente.

1570	?	2	moderate orange	se refer to 116	1770	
contains very light gray		Line	đa.	8	1760	
graylab-pink mandatone			pale red	#11tatome	1750	
	io.		đo.	claystone	1710	(
contains 1570° saudstons		very fine	pale red (5B)	然而四氏命令O 250	1770	
sandstone of 1580'	0		pale red	のない。ため味の質者	1720	
some 1580' siltatome	â	đơ.	grayish orange pink	Ω. •	1710	
eiltstome of 1580'	278	de.	moderate orange pink	Ω .	1700	
mixture of white claystons with grayish rad siltstons	40.	very fine	pale red (5H)	ao.	1671	Ç
vell sorted quarts crystals, weak conens	iron oride	19 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	mederate orange pink (10%)	sand etone	1670	
esindatome of 1570°	1120	*	grayiah red (5%)	#41 totone	1645	•

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General Petroleum - Creager State \$14-6 - Conc.

Thickness Hame Color Sexture Coment Matrix 1790 sendstone coderate fine 1800 do. do. do. line 1810 sandstone sale red co. 1820 sandstone soderate fine do. 1830 do. grayish very fine do. 1850 do. grayish very fine do. 1850 do. grayish orange pink 1850 do. grayish do. do. 1850 do. grayish do. do. 1850 do. grayish do. do. 1850 do. grayish do. do. 1850 do. grayish do. do. 1850 do. grayish do. do. 1850 do. grayish do. do. 1850 do. grayish do. do.	The state of the s									
Test Thickness Mame Color Texture Coment Matrix	contains medium gray numris and 1570' sandstone				(10m)			1900		
Test) Thickness Name Color Texture Coment Matrix 1790 sandstone noderate fine 1800 do. do. do. line 1870 sandstone noderate fine do. 1870 do. prink 1870 do. grayish very fine do. 1870 do. grayish very fine do. 1870 do. grayish do. do. 1880 do. grayish do. do. 1880 do. grayish do. do. 1880 do. grayish do. do. 1880 do. grayish do. do.	ns medium			•				1790		
Thickness Hame Color Texture Coment Hatrix	white leaching spot			•	3 5			1880		
Thickness Manne Color Texture Coment Hatrix	contains medium gra		no.	•	27 *		·	1360	(
(feet) Thickness Mame Color Texture Coment Matrix 1790 sandstone soderate fine 0 singe pink 1800 do. do. lime 1820 sandstone soderate fine do. 1830 do. grayish very fine do. 1840 do. grayish very fine do. pink	contains 1550° elitatone and some medium gray quartz and some bentonite		o. •	• • • • • • • • • • • • • • • • • • •	3 9	S.		1850	·	
(foet) Thickness Name Color Texture Coment Hairix 1790 sandstone moderate fine 1800 do. do. do. lime 1810 siltstone maderate fine do. 1830 do. do. do. do. 1830 do. do. do. do.	contains 1580° siltatone. very pale green siltatone. and some bentonite		•					0421		
(foot) Thickness Mame Color Texture Coment Watrix 1790 sandstone moderate fine 1800 do. do. do. lime 1810 siltatone moderate fine 1820 sandstone moderate fine do. 1820 sandstone moderate fine do.	***************************************		do.	•				1830		
(feet) Thickness Mame Color Texture Coment Matrix 1790	contains alltetome		6	9	6			1820		
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(feet) Thickness Name Color Texture Coment Matrix 1790 sandstone soderate fine orange	contains grayish-re siltstone of 1580*		1110	*				1800		
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	Composit s	Matrix	Coment	xture			Thickness	(feet)	Stion-	

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General Patroleum - Creeger State #14-6 - Cont.

	2050	Sept.	প্ত	2020	6162	2000	1990	1980	1970	1960	2940	στέτ	ation (feet) Thickness
	do.	∂.	siltstone	<u>0.</u>	d.	œ.	de.	S.	do.	sandstone	elltstone	sandstone	Same
	pale red	grayish orange pink	á c	grayish plak	pale red	Ĉ.	greylsh pink	pale red	å.	grayish pink	grayish pink	poderate orenge pink	(b) or
		**************************************		do.	Ç	do.	ය. •	ੌ ਂ	0. 0.	very fine		very fina	Fexture
:	ii.o.	å.	8	\$	1100		∰ •	Č.	<u>a</u>	11200	·		Cement
													Hatr's
G. C. C. C. C. C. C. C. C. C. C. C. C. C.	rome Operation	some claystons		some grayish-black quarts and grayish pink claystom	some grayish-black quartz and grayish orange pink siltstone	some grayish-black querts	SCRC SILTSCOME	40.	contains grayish-orange pink claystone	contains graytan black querts	gray quarts	contains medium gray quarts and 1580" silt- stose	Controls

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		((ucton-
2220	2210	ଅନ୍ତର	2190	5180	2175	21.8	2155	ટ્યાંક	2070	(feet)
	•	·	J					J.	•	t) Thickness
ů.	ŭ.	sand sto ne	ů •	G.	04 3	ahal e	siltstone	sands to no	siltatono	Маке
pale red (5%)	grayish pink	poderate orange ofsk	grayish orsage pluk	do.	20.	binish binish	do.	noderate orange pink (10R)	pale red (5B)	Color
7126	very fine	1°130	20	ão.	do.	aphanitic		7.1 no		Texture
		1100					Ĝ.	l'ime		Cene nt
										Ketrin
	some light bluis	**************************************	contains some pa	contains some blue claystone	contains some pe		contains some gracity stone	contains some pa		Comment
	pale red	do. grayish very fine pink do. pale red fine (58)	sandstone moderate fine lime orange of.nk do. grayish very fine pink do. pink (58)	do. grayish do. orange pluk orange pluk do. grayish very fine pink do. (58)	do. do. do. do. grayish do. orango pluk sandstone moderate fine lime orango pluk do. grayish very fine pink fo. grayish very fine pink (53)	do. do. do. do. do. do. do. do. do. do. do.	do. do. do. do. do. do. do. do. do. grayish do. sandstone moderate fine lime orange pink do. grayish sery fine fine (53)	2155 shale light sphenitic binish syray 2170 do. do. do. 2180 do. do. do. 2190 do. grayish do. 2200 sandstone moderate fine lime orange pink 2210 do. grayish tery fine pink 2220 do. grayish tery fine 2230 do. grayish tery fine	2195 2155 2156 2157 2160 2160 2170 2170 2180 200 200 2180 200 200 200 200 200 200 200 200 200 2	2070 siltstone pale red (5B) 21k5 sandstone vocarate fine lies contains orange plank (10k) 2155 siltstone do. do. clayston 2150 do. do. do. clayston 2160 do. grayish do. contains 2160 do. grayish do. contains 2160 do. grayish do. contains 2160 do. grayish do. contains 2160 do. grayish do. contains sandstone plank 2270 do. grayish do. contains orange plank 2270 do. grayish tory fine lime voll sor plank 2270 do. grayish tory fine sore ligh plank 2270 do. grayish tory fine sore ligh plank 2270 do. grayish tory fine

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General Petroleum - Cresger State #14-6 - Cont.

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	do.	wiltstone	da.	а 9	do.	2	madetone	₫ 0 •	એ •	ය •	send stone	Thickness Mane
	do.	grayish orange pink	₫ 0	onle red	a.	moderate orange pink	₽	do.	grayish orange pink (578)	moderate orange wink (5YR)	grayish orange yink	Color
								đo.	ì.	do.	very fine	Pexture
] ine	+. -	â. 0	acai aptro	Line	11ae	eptro	वे •	1100	iron oxide		Cement
												Martin
41	contains some pale red	contains pale red mudstone or 2320'	•	contains maketome of	some pale red mudstone		contains some pale red eiltatome	•	conteins some siltatone		contains some questrite	Connecte

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General Petroleum - Greager State #14-6 - Cont.

Enicknoss Home Colar Taxbara Company Market Form moderate very fine iron order camps pale red spheritic iron order correspond or angle condition order camps pink (572) Claystone moderate very fine do. condition crange pink (572) Claystone moderate very fine do. condition crange pink (572) Sandstone moderate very fine iron crange pink (572) Sandstone polerate crange orange pink (572) do. grayish crange crange crange crange pink (572) do. grayish crange crange crange crange pink (572) do. grayish crange						(C			Form-
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Texture Cament Hairix Description force to iron and anish fragments (572) red sphasitic iron anish semilar to 2350' oxide some basalt fragments (10R) (572) (572) red very fine iron contains pale red substrate very fine iron contains pale red substrate very fine iron contains pale red substrate very fine iron contains pale red substrate very fine iron contains some basalt fragments contains some basalt fragments contains some basalt fragments contains some basalt fragments (10R) rete contains some basalt fragments (572) (572)	これでは、1000年の大学の大学の大学の大学の大学の大学の大学の大学の大学の大学の大学の大学の大学の		Ģ.	о. •	а 0 •	•	eiltstone	sandstone	claystons	ecides to de	claystone	sandstone	****
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a basalt fragments contains pale red sudstone contains pale red sudst contains pale red sudst de contains some pale red sudst de contains some pale red siltstone, basalt fragments de contains some pale red siltstone contains some pale red siltstone contains some pale red siltstone											aphasitie		Texture
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and the control of t		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	contains some pain red		some beaute fragments	contains some pale red wiltetome, besalt	some baselt fragments	contains pale red mudst	contains pale red sudst	some basels fragments	similar to 2320°	basalt fragments	Comments

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General Petroleum - Crasgar State 614-6 - Cant.

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		do.	grayiah orange	û •	moderate orange pink	pale reddiah brows	moderate orange otok (102)	pele red (5A)	độ,	moderate orange pink (102)	8	grayish orange plak(578)	Color
		a o	a a o		•	very fine	do.	14 P B B	very fine	. Ta	n. 3	very fire	Terture
		weak line			11me		1100	iron					Cement
The second secon		.											Hatriz
			well sorted, very friable	with quarts	custy red silvetone	quarts grains and dusky red siltstone	none dusky red siltstone and some pale yellowish green siltstone	quarte grains	some baselt fragments and noderate red allitations	contains quarts and nole red stitutome	contains some pale red siltstone with some quarts	centains some pale reddish siltatone and some besult fragments	Company 15 a
tribute and the control of the contr	6	I	74/0	A. 4		Î	siltatone Fellowish	wite	nts and	3.0	red		

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	nale red (sk)	moderate orange pluk (10R)	grayish	pale red	ao.	20.	do.	do.	do.	pink(10E)	do.	grayish orange pink(5TR)	Coler
	\$	rery fine		do.	23 •	ф •	do.	œ•••••••••••••••••••••••••••••••••••••	3. 0	do.	do.	very fine	Perture
	11me	TONY		1100	Cz •	dron fron	•	do.	ĝ.	line.	₽.	11:00	Coment
													Vatrix
98	1144	contains grayish red	contains pale red analytome with line and very light gray sandstome		some dusky red claystons		some quarts and dusky red claystone			similar to 2260°	some dusky red siltstone	some light gray silintome	Commente

2750 2858 2760 2840 28.30 2820 OT82 2800 2770 2790 2780 sandstens sandstone siltstone moderate orange red (log) pale red (10E) pale red (5R) (52) moderate orange pink(10%) pale red (10E) TREE TIME 6 đo. ç. ö very fine å, Spiro oride õ Had 11mm grayish orange pink sand-0 contains grayish red basalt fragments and grayish-red wiltstone some grayish-red silistons some basalt fragments

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General Petrolous - Croeger State #14-6 - Cont.

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			(Form-
3 000	2980	2970	2960	2950	2940	2930	29162	2890	22 88 3	2570	Depth (feet)
											Thickness
pude to re	eiltstone	do.	mudstone	Man a C. C.	œ.	sandstone	mud stone	•	ů.	enndstons	
pale red (5R)	00·	ido.	grayish red	grayish orange pink(10%)		moderate orange pink(log)	grayish red	moderate orange pink	moderate crange pink(10%)	(10E)	Solor
very fine	aphenitic	very fine		ent Line	fine	rine		very fine	***	7140	Perture
o o	3	do.	1.1me		40	o zide	14	11me		13me	Capont
	* * *										Hatrix
some siltatome	gypsum fragments and 2940° sandatoms	gypsum fragments, 29k0s sendstone, and basalt	2940' sandstone	containe 2940' sandstone. basalt, mudatone of 2918'	contains gypsum fragments, mudetone and basalt	some grayleh red sudstone, and basalt fragments	very well sorted	contains grayleh-red siltstone	contains dolomite and grayish red wilkstone		Comments

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leneral Potroleum - Cresger State Filmo - Cont

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3160	3150	ont.	37.30	3120	OT 15	0,90	3080	3070	30 60	2 40	9 9	3020	30 10	(feet)
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very fine		5.							i	•		·	<u>:</u>	Texture
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							·				•.			Xetix
some beneit and sileston	very fine grain andston		some grayleb-red clayston	some claystone with line	some limestone fragments	nome quarte exystels,	contains gypsum sad mudstone	limestone fragments		contains limestons fragments	Inselt fragments. fragments & 2940*	29k0*sandstone with lims	Opeun, besalt	Comments
13catons	and stone	ر م 4	clayatom	th lime	agments.		r.	ř			senta. Epperas 2940 sandetome	# 1 1		

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ë	ð.	spadetons	6	do.	8	siltetons	do.	11mestone	a. O	0	do.	siltstone	Xery •	
red(5E)	red (10%)	pink pink	5	& •	độ.	grayich	è.	Lacint sticker	ão.	e e	ਹੈ0•	grays sh	15[62	; ;
do.	ă.	vory fine			 • . *		6	very fine					Texture	
8	lima	e price	6	\$	å. 0	ő	ĝ.	6	0	Ĉ.	1450		Coment	
										-	. : :		Hatrix	
				Livertone Crassonts	mica fragments	limestone fragments	196' siltstems	HOME CANTER CAPACATE	Take CATO. * and the	50.	astone		Companie	
	do.	do. pale do. lime red (10%) red (5%)	sondstone moderate very fine bride orange pink pale do. lime fod (10%) red (10%) do. do. do.	sendetone moderate very fine iron orange pink pale do. pale red (10%) do. io.	do. do. do. do. do. do. do. do. do. do.	do. do. do. do. do. do. do. do.	do. do. do. do. do. do. do. do. do. do.	do. do. do. do. 11sestone finguents 11stone forest finguents 1256 siltstene 1256 siltstene 1256 siltstene 1256 siltstene 1256 siltstene 1256 siltstene 1256 sente 125	1230 limestone light very fine do gray was do do do do do do do do do do do do do	do. do. limestons light very fine do some quarts crystals gray th do. do. do. do. do. do. do. do	196 do. do. do. do. like 2918', vell ori 196 do. do. like 2918', vell ori 196 do. do. like 2918', vell ori 196 do. do. like 2918', vell ori 1920 do. do. do. like 2918', vell ori 1920 do. do. do. like 2918', vell ori 1920 do. do. do. like 2918', vell ori 1920 do. do. do. like 2918', vell ori 1920 do. do. do. like 2918', vell ori 1928 d	1180 do. do. do. 1180	170 sitetome grayish 180 do. do. lime 196 do. do. do. 1270 do. </td <td>Treet Thickness Mane Color Forture Compat Makin Comments Treet Thickness Street Color Compat Comments </td>	Treet Thickness Mane Color Forture Compat Makin Comments Treet Thickness Street Color Compat Comments

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1 **टार** मह 3420 3400 3350 3385 3370 Š 3320 33**30** shale alial e eiltetone siltetone General Petroleum - Creager State #14.6 - Cont. grapish red purple greyish 8 50% 33601 shale limestone fragments, quarte contains 33% 3360 shale contains 50% 3360° shele composed of biotite feldager and guarts some limestone fragments

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3320 **Q**. 17. 3390 3370 38 7.W.7 3330 SHOOT SHOOT व्यक् 3**40**0 3385 3375 stale General Petroleum - Creager State 414-5 - Cont. siltetome eiltetone greyish 1100 Hatrix Minestone fragments, quarte some lineatoms iransents 50% 3360' shale contains 50% 3350* shale composed of biotite contains 33% 3360' shale Commands.

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FORM O. & G. 1

ARIZONA STATE LAND DEPARTMENT

Sundry Notices and Reports on Wells

Lease or ARIZONA Permit No.O.P. 14404

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Notice of intention to drill		لوث واستاد فالدال المستاد المستاد والمستاد والمس
Notice of intention to change plans	. 1 5	
Notice of date for test of water shut-off	• • • • • • • • • • • • • • • • • • •	
Report on result of test of water shut-off	! !	
Notice of intention to re-drill or repair well	i • •	
Notice of intention to shoot	1 1	
Subsequent record of shooting		
Record of perforating casing	,	
Notice of intention to pull or otherwise alter casing	1 1	
Notice of intention to abandon well	i i	
Subsequent report of abandonment		
Supplementary well history		

***************************************		٠
(Indicate above by check mark nature of report, not	•	
	November 16	19 48
Following is a (Notice of intention to do work) (Report of work done)	n land under (permit) described as foll (lease -)	lows:
Well No. Creager State #14-6. Sec. 6. T. 19 Section	Township Range	**********
The well is located 330° feet (SS) o	(E)	
Section N. W. 1/4 Section	of West	line of
		feet
The elevation of the derrick floor above sea level is DETAILS OF	PLAN OF WORK later lepot	
(State names of an expected depth to objective sands indicate mudding jobs, cementing points, and all oth 13-3/8 th 0.D., 51.5#, grade J-55 cemented at	; show sizes, weights, and lengths of proper er proposed work.)	osed casings;
7" O.D., 23# incl. 5000! of grade J-55 and		
(est'd top of Morton 4500!-6000!)		
		S. A.
,	Δ	
Approved November 25, 1946	Company General Petroleum Corp.	
M Col Batel .	By Silas Brown Agent	
C. C. Willes	Total Washington	
	how R. A. Wadawarth - Chief Poten	leum Engine
State Land Commissioner	by F. L. Wedaworth - Chief Petro	leum Engine
	Title	
State Land Commissioner Arizona State Land Department		-
	Title	

0944404

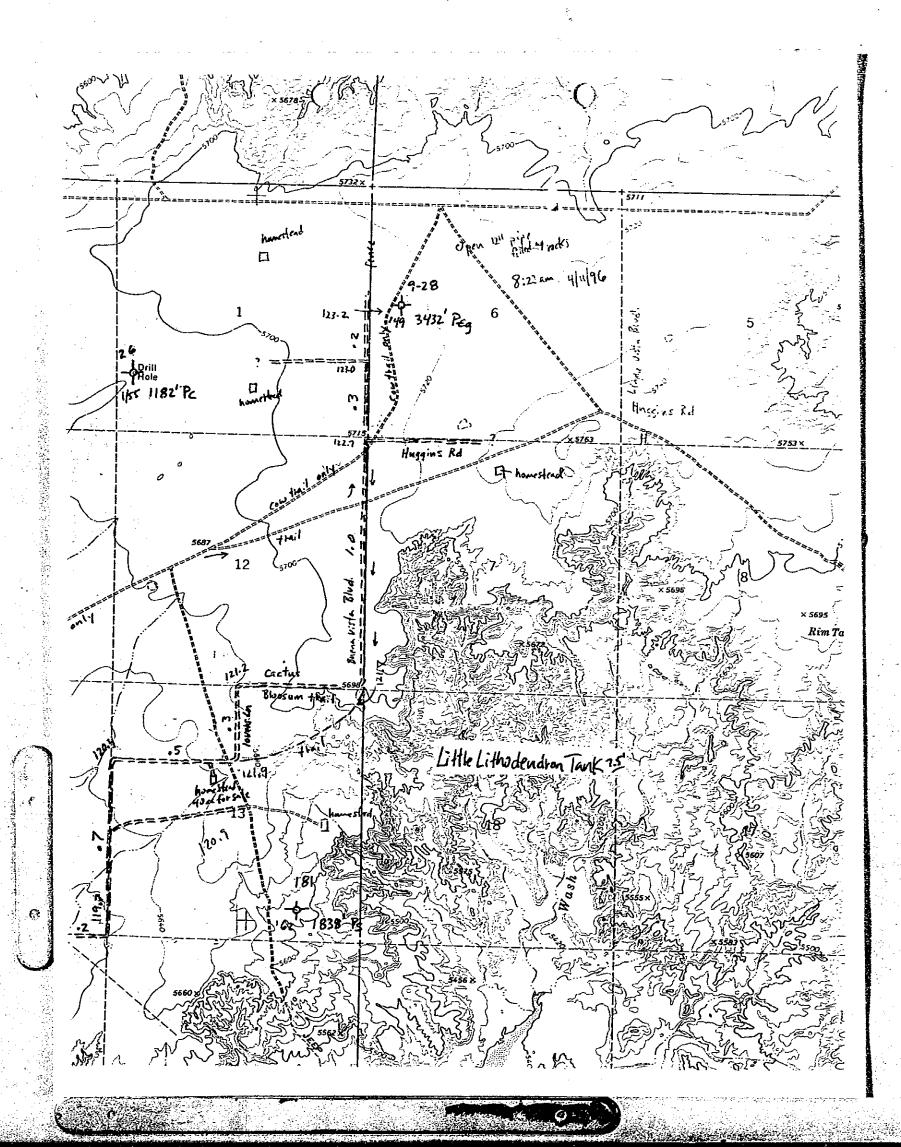
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SEC. 6 1 19N R 33E

ABSTRACTED _____ AREA ______
PLAT OF SURVEY FILED _____

SW SW NW4

OP 44404



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8797 (F.G. RUNS - <u>15</u> Note similarity of this upper Coconing sandstone.
TESTED IN THIS WELL) with same upper Coconsno in
Nat. Gas English No. 1 1cg (1652-60) See Enc. 35 Western Nat. Gas English No. 2, a south offset to No. 1 (no electric log reported) produced reported 140 bbls. of 42 gravity oil per day. 9

TOTAL STATE OF

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GENERAL PETR CORP CREAGER STATE 14-6 W.C. NAVAJO CO. ARIZONA L.J.C. 3-3-49

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Bond No. L-67862

HIRBMANS HUND

INDEMNITY COMPANY

HEAD OFFICE SAN FRANCISCO

EASTERN DEPARTMENT NEW YORK CITY

0 & G Form 6

BOND OF OIL AND GAS PERMITTEE OR LESSEE

Arizona Code 1939, Article 13-14

BOND

CORPORATION, of the County of Los Angeles, and State of California, as principal, and FIREMAN'S FUND INDEMNITY COMPANY, of the County of Los Angeles, State of California, as surety, are held and firmly bound to the State of Arizona, in the penal sum of CNE THOUSAND AND NO/100 (\$1,000.00) dollars, lawful money of the United States of America, for the use and benefit of the State of Arizona, and of any person holding a lease or other interest in the lands described in permit or lease No. OP-44404, or of any entrant or patentee of any portion of such lands covered by such lease which were entered or patented with the reservation of oil and gas deposits to the State of Arizona, or under mineral lease to such person on any portion of said lands. Such sum to be paid to the State of Arizona, for such payment well and truly to be made, we bind ourselves and each of us, and our heirs, executors, administrators and assigns, jointly and severally, by these presents.

Signed and sealed this 29th day of November in the year 1948.

The condition of the foregoing obligation is such that,

Whereas, the said principal, by instrument dated September 16, 1948, has been granted an exclusive right to prospect and drill for and remove oil and gas and other hydro-carbon, whether deposited with the oil and gas deposits, in or under the following described lands:

SEC	TWP	RGE	ACRES
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Under and pursuant to the provisions of Chapters 13 and 14, Arizona Code 1939, and,

Whereas, the said principal has by said instrument entered into certain covenants and agreements set forth therein,

NOW THEREFORE, if the said principal shall faithfully comply with all the provisions of the above described permit or lease, and hold harmless the State of Arizona, and all persons interested in such land, from any damage or injury by reason of the lawful act of said Permittee or Lessee, or in any damage resulting from the careless use of the deposits in said land, then the above and foregoing obligation is to be null and void, otherwise to remain in full force and effect.

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execusors.

Signed, sealed and delivered in the presence of

l supposite State

GENERAL PETROLEUM CORPORATION

By Vice-Fresident
By August Secretary

FIREMAN'S FUND INDEMNITY COMPANY

By Attorney in Fact

state of California, COUNTY OF LOS ANGELES

On this 29th day of November, N. D., 1948, before me, Vera T. Rathbum, a Notary Public in and for the said County and State, residing therein, duly commissioned and sworn,

personally appeared J. L. MARTIN

to be the Vice-President, and J. A. GRACE

known to me to be the Assistant Secretary of the GENERAL PETROLEUM CORPORATION, the Corporation that executed the within instrument, known to me to be the persons who executed the within instrument on behalf of the Corporation therein named, and acknowledged to me that such Corporation executed the same.

In Whitness Whereof, I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

My Commission Expires Dec. 27, 1951,

Notary Public in and for said County and State

CANGELLED DATE.

0,944404

May 12, 1949

Mr. Frank B. Carter General Petrolsum Corporation 612 S. Flower Street Los Angeles, California

Dear Mr. Carter:

Thank you very much for your note detailing corrections to be made on the electric log of the Creager well and the new corrected location.

Very truly yours,

L. A. Heindl Geologist

LAH:kb

op44404

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GENERAL PETROLEUM CORPORATION

A SOCONY-VACUUM COMPANY

612 South Flower Street, Los Angeles 14, Calif.
April 8, 1949

Mr. L. A. Heindl, Geologist State Land Department State of Arizona Phoenix, Arizona

Dear Sir:

Duplicate copies of the log, history and electric log of General Petroleum Corporation's Creager-State #14-6, Navajo County were recently sent to you. Please be advised that the elevation shown on the electric log is incorrect and should be 5720' (derrick floor) in conformance with that shown on the driller's log. Also, please note that the location of the well as shown on the electric log is the correct surveyed location and is slightly different from that shown in the log and history.

Please correct your records accordingly.

Very truly yours,

Frank B. Carter, Asst.

to Director of Exploration

FBC:jlm

FORM 5028 08 44404

April 9, 1949

Mr. Frank B. Carter General Petroleum Corporation 612 South Flower Street Los Angeles 14, Calif.

Dear Mr. Carter:

Thank you very much for the very complete information forwarded us regarding your Greager-State #14-6 well.

As soon as the U.S.G.S. completes its sample analysis of the cuttings from the well I will forward you the copies you request.

Very truly yours,

L. A. Heindl Geologist

LAH:kb

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GENERAL PETROLEUM CORPORATION

A SOCONY-VACUUM COMPANY

612 South Flower Street, Los Angeles 14, Calif.

April 5, 1949

Mr. L. A. Heindel, Geologist State Land Department State of Arizona Phoenix, Arizona

Dear Sir:

In accordance with your request, I am enclosing two copies of the log, history and electric log of General Petroleum Corporation well, Creager-State #11-6, sec. 6-19N-23E., Navajo County, Arizona.

Please forward to us a copy of the U.S.G.S. report on the well cutting samples, when available.

Very truly yours,

Frank B. Carter, Assistant fo Director of Exploration

FBC:jlm Encl.

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STATE LAND DLFT. OF ARIZONA

GENERAL PETROLEUM CORPORATION

SDCGHY-VACUUM

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A SOCONY - VACUUM COMPANY

P. O. Box 1383 Durango, Colorado March 11, 1949



Mr L. A. Heindl State Land Department Phoenix, Arizona

STATE L. OF ARIZOLA

Dear Leo:

Re: your letter of March 8, 1949 I'm sorry I do not have much information on the well north of the White tanks.

Newt Wolcott and I did visit the well when it was down to about 4100 feet and saw only granite and volcanic wash material. The "geologist" on the well said it was anhydrite, cap rock and everything else supposedly connected with oil and gas. I believe Newt can tell you more about the well than anyone as he was there two or three times I believe. I doubt if you will ever be able to correlate any of that valley fill stuff as it changes rapidly laterally.

As for the bottle of scotch that you lost to Ferebee, I can only yell "SUCKER" and send you my sympathy - with reservation. The Kaibab formation peters out south of Holbrook and the edge trends southeast toward the White Hountains. On the other side of the old high that existed at the time of deposition is a limestone known as the San Andres Limestone with its source coming from the Southeast. The name Kaibab was used by our geologist so most of the Arizona geologists would realize its stratigraphic position. Now, Sucker, you paid a bottle of scotch for the San Andres Is. which rates only a small beer. My advice to you is "learn your section and Keep your BIG mouth shut" Again I offer you my sympathy. (T. S.)

Give my best to O.C., Lela, et.al.

With sympathy

S. C. Brown

P.S. The Kaibab is not present at Creager-State 14-6. T.S. - 6-19m-23E

08 44404

March 8, 1949

Mr. S. C. Brown General Petroleum Corporation Durango, Colorado

Dear Buzz:

Sam tells me that at one time or another you either collected or saw samples from some well drilled north of the White Tank Mountains.

I am trying to corral all information possible and would appreciate having either any notes that you took at that time or any comments regarding what you might remember of what you saw. Of course, if you have the samples, send them along. They won't do you any good where you are now.

I am having a hard time trying to pry that bottle of Scotch back from Ferebee. Hereafter remind me that your word isn't as good as your Kaibab.

Regards

L. A. Heindl

LAH:kb

0844404

March 8, 1949

Mr. C. M. Wagner Director of Exploration General Petroleum Corporation 108 West 2nd Street Los Angeles, California

Dear Mr. Wagner:

Mr. Robert Smart, your geologist on the Greager #14-6 Well northeast of Holbrook, has informed me that all information regarding this well will be forthcoming from your office.

The information that we would like to have consists of the complete driller's log with a record of the results of any tests taken, a copy of the electric log and a copy of the sample analysis of the well cuttings when completed. Mr. Smart has already forwarded the State's cuttings to us and they are being analyzed by USGS geologists in Tucson. We would be glad to forward to you a copy of their analysis when it is ready should you so desire.

I should like once again to thank you and your Company for the very fine cooperation that has been shown by you throughout the drilling of this well.

Very truly yours,

L. A. HEINDL Geologist

LAH: kb

08 44404

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GENERAL PETROLEUM CORPORATION



A SOCONY - VACUUM COMPANY

198 WEST SECOND STREET

LOS ANGELES 12, CALIF.

DIE GIGITATIONS

SARGOYLE

February 9, 1949

FEB 10 1949

Mr. O. O. Williams State Land Commissioner Phoenix, Arizona

Dear Sir:

In compliance with your request for samples from Oreager State 14-6, I am forwarding under separate cover a complete set. Samples were taken at 10 foot intervals, washed and placed in a brown, sample envelope such as enclosed herein.

Envelopes are marked with the well name and depth. Cores are indicated by core number, depth and recovery.

Very truly yours,

Robert Smart

Robert R. Smart

RRS:ans

op 44404

GENERAL PETROLEUM CORPORATION



A SOCONY - VACUUM COMPANY

108 WEST SECOND STREET

Los Angeles 12, Calif.

January 21, 1949



State of Arizona State Land Department Phoenix, Arizona

OF ARIZONA

Attention: Mr. L. A. Heindl

Dear Mr. Heindl:

In accordance with instructions from Mr. C. M. Wagner, I enclose a direct print of the electric log, scale 1" = 50', of the first run made on our Creager State #14-6 well, drilling near Holbrook, Navajo County, Arizona.

Our normal procedure in supplying electric logs to State or Federal bodies is to file the composites after the total depth of the well in question is reached. However, temporary prints on each electric log run are usually furnished to those requesting them. Please consider the enclosed print of a "temporary" nature. We will furnish your office with temporary prints on any future electric log runs.

Please feel free to call on us for any data you may require on this well.

Yours truly,

Chief Petroleum Engineer

FLW:jlm cc: R.R.Smart File

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O DATE OF

DORSEY HAGER Jan 15-1949

CONSULTING GEOLOGIST Bolls & Hollrook, frig.

har w. Thirdlgreewed Holeus report and well go over it carefully williams paper is new to me and i'd like to see it - also what he cally plurgs. He may have some of those it find as flow remains on his list. It any rate if the weather is good tel show you some interesting features, and you = hordonoth the lava had to come can judge for youself. from somewhere but I don't see it's somee in the basin. If I do find that The overlooked a bet the be the first to atknowledge it. It want be the first time The had to est Pray. Is there everyle demand for that paper of mine to justify quother printing! If so I want to correct some errors typographic) and several other numer points - footwoles at bollow as I thought was to be done. I didn't see page proof. The Keural Pet. well gives us a point for the navejo treh Eastward love of the Black was a Basin It doestit affect the rebative positions to any marked extent. Brown thinks goo feet of the red beds above the Essanino to be Climbe and that 78 for the Shinarump is too much. I disagree It wakes no difference in our structure anyway but I pau show footfeet I samot figure his reasoning. of moenkapie sat Joe lity And 350. at adaman with no locamino showing in the well there. Sincerely yours

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January 14, 1949

Mr. Robert R. Smart General Petroleum Corporation P. O. Box 277 Holbrook, Arizona

Dear Bob:

THE STATE

Thanks for the information and a batch of monthly operation report forms are herewith enclosed, also the Hollo Ellis report. Ellis has been popping off to the newspapers and the wire services and radio have picked his statements up and given them considerable local circulation. Did you notice anything about his statements regarding Cochise County oil and his oligocene shoreline in the newspapers up your way?

You need not re-make the December report as the letter will be filed along with later reports.

I am writing C. M. Wagner for the Schlumberger to 795 feet.

If anything gets really hot let me know so that, if at all possible, I will have time to reach Holbrook.

Very truly yours,

L. A. Heindl

LAH:bg

c P44404

January 14, 1949

Mr. Dorsey Hager Holbrook, Arisona

Dear Mr. Hagers

Enclosed please find a copy of the Holm report and any comments, suggestions, criticisms, etc. will be greatly appreciated. I have just finished re-reading the report and have begun roughing out an outline. I'll be able to use every bit of savice and assistance that I can garner.

Out of curiosity I looked up a 1936 GSA report by Dr. Howel Williams on the Hopi Buttes area. He admits that a great many structures out there are probable lave flows but does specify some as being necks. Will bring a copy of the report north with me on the chance that you might not be acquainted with it and it should at least add interest to whatever observations we may make in the field, weather permitting. I'll probably hit Holbrook immediately after the first of February and hope that you will be there at the time.

Thanks again.

Very truly yours,

L. A. Heindl

Enc. LAH:ld No empire

00 44404

January 14, 1949

Mr. C. M. Wagner
Director of Exploration
General Petroleum Corporation
108 West Second Street
Los Angeles 12, Celifornia

Dear Mr. Wagner:

Mr. Robert R. Smart, geologist at your Creager #14-6 well near Holbrook, Arizona, has shown me a Schlumberger log of the well down to 795 feet. The State Land Department is anxious to keep as complete a file as possible on exploratory oil wells and we would appreciate a copy of the log for our files.

Mr. Smart has indicated that your company desires to only give out well hole depth at this time. Any information you forward us will be kept strictly confidential until such time as your company releases it.

We would like you to know that we appreciate the splendid cooperation that we have been receiving from your company and everyone connected with the well.

Yours very truly,

LAH: bg

L. A. Heindl

OP 44404

GENERAL PETROLEUM CORPORATION



A SOCONY-VACUUM COMPANY

108 WEST SECOND STREET

LOS ANGELES 12, CALIF.

January 11, 1949



Mr. Leo Heindl Geologist State Land Department Phoenix, Arizona

Dear Leo:

Sorry that this is not on the correct form, as I find I do not have any Monthly Operation reports. If this does not suffice, send the forms and I'll complete the report on the proper form. Briefly, however, this is the story of Creager State #14-6 for the month of December 1948.

Rigging up was completed and the well was spudded on December 17, 1948. Circulation was lost at 647 feet. Surveys were run at 578 feet with drift of 0° 15' from the vertical and at 759 feet with drift of 0° 5'. A Schlumberger electric log was run to 795. 13 3/8 casing was set with 550 sacks of cement on December 26, 1948. Weld on casing was found 0.K. when tested with 3000 pound water pressure.

Total depth on December 31, 1948 was 1015 feet.

Very truly yours,

Robert R. Smart Geologist

RRS:ans

P.O. Box 277 Holbrook A

> JAN 13 1949 STATE L... OF ARIZONA

0044404

December 9, 1948

Mr. P. K. Isham, Special Agent Firemen's Fund Indemnity Co. 602 Title and Trust Building Phoenix, Arizona

Dear Sir:

This will acknowledge receipt and thank you for the General Petroleum Corporation Bond of Oil and Gas Permittee, L-67862.

Sincerely yours,

O. C. Williams State Land Commissioner.

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108 West Second Street Boy 2745 Los Angeles, California Phoenia

08 444 04

FIREMAN'S FUND INDEMNITY COMPANY

ARIZONA SERVICE OFFICE 602 TITLE AND TRUST BUILDING PHOENIX, ARIZONA

PHILLIPS K. ISHAM, SPECIAL AGENT

TRLEPHONE 4-1447

December 7, 1948

Mr. O. C. Williams State Land Commissioner Capitol Building Annex Phoenix, Arizona

Dear Sir:

L-67862 - GENERAL PETROLEUM CORPORATION Bond of 0:1 and Gas Permittee

We are enclosing the captioned bond for proper filing with your department.

Very truly yours,

FIREMAN'S FUND INDEMNITY CO.

P. K. Isham, Special Agent

PKI/rhe Enc.

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OF ARIZONA

OP 44404

GENERAL PETROLEUM CORPORATION



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A SOCONY - VACUUM COMPANY

108 WEST SECOND STREET

LOS ANGELES 12, CALIF.

November 17, 1948

NOV 18 1946

GARGOYLE

Mr. O. C. Williams Arizona State Land Commissioner Phoenix, Arizona

STATE LAND DEFI-OF ARIZONA

Dear Mr. Williams:

You will find enclosed three copies of Oil and Gas Form No. 1, notice of intention to drill on State Permit O.P. 44404. When I talked with Mr. Bone over the telephone last week I believe I told him that the location, as picked off the geologic map, would fall on Santa Fe land. This is not the case and, therefore, a bond may be required. I presume Mr. Meek of our Right-of-Way department has talked with your people about that matter.

We would appreciate it if you would send copies of replies to notices and other correspondence directly affecting the well to:

> E. J. Carnahan, Division Superintendent 2525 East 37th Street Los Angeles

F. L. Wadsworth, Chief Petroleum Engineer 108 West 2nd Street Los Angeles 12

R. O. Swayze, Manager California Operations 108 West 2nd Street Los Angeles 12

The three extra copies of the enclosed notice are for this purpose. The original should go to Mr. Brown as the official file will be in his possession, or in the possession of some other Arizona agent who may succeed him.

Yours very truly,

S. C. Brown

R. O. Swayze
Manager California Operations Production Department

Cy 44964ROS:EB Encs.

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CHANGE OF ADDRESS Effective February 28, 1949

Arizona

GENERAL PETROLEUM CORPORATION

State 0P-44402

OP-45328-S

OP-444404

OP-45308

OP-44935

GENERAL PETROLEUM BUILDING

offices will be established in the

612 South Flower Street Los Angeles 14, California

for the following departments

MARKETING (EXECUTIVE)

ACCOUNTING

INSURANCE

PURCHASING

ADVERTISING

LAND -

REFINING

AUDITING

LEGAL

RIGHT OF WAY

COMPTROLLER

MANUFACTURING

SALES (EXECUTIVE) SALES PROMOTION

CONTRACT CREDIT

MEDICAL

SECRETARY

ECONOMICS EXECUTIVE

PATENTS

SOUTHERN CALIFORNIA

GAS

PERSONNEL

SALES ACCOUNTING SUPPLY - EXCHANGE

GENERAL COUNSEL

PIPE LINE PRESIDENT

Tax

GEOLOGICAL GEOPHYSICAL

PRODUCTION

TREASURER

INDUSTRIAL RELATIONS

PUBLIC RELATIONS

VICE PRESIDENTS

Offices previously occupied by these departments in the -

HIGGINS BUILDING 108 W. 2nd ST.

NELSON BUILDING 4th AND BROADWAY NINTH & HILL BUILDING 315 WEST 9th STREET

GENERAL PETROLEUM CORP. 2401 E. 27th STREET

will be vacated effective the same date.

NEW MAIL ADDRESS:

NEW TELEPHONE:

P. O. Box 2122 **Terminal Annex**

MAdison 6-5711

Los Angeles 54, California

0844404